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THE

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OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS,
INTERNAL IMPROVEMENT, COMMERCE,

AND

GENERAL LITERATURE.

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M. TARVER AND T. F. RISK,
EDITORS AND PROPRIETORS.

PUBLISHED MONTHLY.

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March 1, 1848.

THE

WESTERN JOURNAL,

M. TARVER and T. F. RISK, Editors and Proprietors.

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THE

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ART. I.—WHERE SHALL WE FIND A MARKET FOR OUR SURPLUS GRAIN?

WHERE shall we find a market for our surplus grain? The individual who can answer this inquiry, and direct us where consumers and purchasers can be found, able to pay remunerating prices to the grower, will be quite as great a benefactor to the west—as he would be to mankind in general—could he teach them how to produce two blades of grass instead of one.

According to the estimates made by the Commissioner of Patents, it appears that, after feeding both man and beast, and making liberal deductions for all other purposes, there will still remain of the crop of 1847, a surplus of 224,384,502 bushels of grain, for exportation,

This aggregate is made up of the following articles: wheat, 40,581,750 bushels; Indian corn, 173,654,904 do.; rye, 5,296,913 do.; and buckwheat, 4,950,935 do.—amounting, in all, according to the prices at which these grains are valued by the Commissioner, to $124,078,522 55—a sum larger than the average annual exports of the entire country, including cotton, tobacco, rice, and manufactures of every description.

The Commissioner of Patents, in his report for 1847, says: "We have not been able to obtain the returns from other countries, (meaning other countries besides Great Britain,) for a series of years. But, from the best authorities which we have been able to consult, we have compiled the following table, exhibiting the quantity of wheat (exclusive of other grains,) required by the principal corn purchasing countries of the world:

Countries.	Quantity required—bushels.
Great Britain,	20,000,000
France,	5,000,000
West Indies, generally,	2,500,000
British American Colonies,	2,500,000
South America, generally,	1,900,000
Holland,	1,000,000
Total	32,900,000."

Now it will be seen that, if we had no rival in these markets, our surplus of the growth of 1847 would supply all the wheat purchasing countries, and still leave 7,681,750 bushels on hand. But, according to the estimates of the Commissioner of Patents, Russia and other countries also produce a surplus of wheat, amounting to about 20,000,000 bushels; and, although we consider this a very low estimate, yet it is sufficient to prove beyond all controversy, that we can never find a remunerating market abroad for our surplus, except in years of scarcity. Yet, the Commissioner of Patents has undertaken to show the American wheat growers that they can compete successfully with those of any other country; and, after estimating the cost of growing, transporting to market, &c., he says: "We are, therefore, confirmed in the conclusion, that the American grain growers can deliver grain, or flour, at as low a price in England, as the grain growers of any other country, not excepting Russia, on the Black Sea; and that they have it in their power to command the great grain market of Great Britain, and of nearly all the corn importing countries of the world." Had the American people never made the experiment of growing grain for foreign markets, and being ignorant of the social condition of other countries, one should undertake to show, by figures, that they could drive the Russian and other European grain growers out of the English market, such a conclusion might not be regarded as altogether unreasonable; but, when all the facts connected with the subject are taken into consideration, we can scarcely conceive how an intelligent mind could arrive at the opinion so confidently expressed by the Commissioner of Patents.

We have met with no historical account, showing when the exportation of wheat and other grains commenced from this country, but the public documents show the amount exported annually since the year 1789. And, according to tables published in the Merchants' Magazine, for April, 1845, it appears that the average amount of wheat exported from the United States, to all countries, from the year 1790 to 1843, inclusive, was 4,838,381 bushels—estimating that shipped in the form of flour, at five bushels of wheat to the barrel.

Thus it will appear that the annual exports from this country have averaged about one-seventh part of the quantity required by foreign purchasers. We have not before us the amount of wheat exported in the years 1844 and 1845, and cannot, therefore, determine the precise period when the scarcity in Europe began to stimulate our exports; but, from a statement in the Merchants' Magazine for December, 1847, it appears that we exported during the fiscal year of 1845-6—wheat, 1,613,795 bushels, and 2,899,476 barrels of flour; which, being reduced to wheat, at the rate of five bushels to the barrel, makes the entire amount equal to 16,111,175 bushels.

According to the Report of the Treasurer of the United States, we exported during the year ending the 30th day of June, 1847—wheat, 4,399,951 bushels, and 4,382,496 barrels of flour; which, being reduced to grain, at the rate of five bushels to the barrel, is equal to 21,942,480 bushels—making the total export of

wheat for that year, 26,312,431 bushels. We are not in possession of facts that enable us to estimate, with any degree of accuracy, the quantity of wheat exported in the fiscal year ending on the 30th June, 1848; but, from a statement contained in the Delaware Republican of the 24th of August, it appears that the quantity of flour exported to Great Britain and Ireland, from the 1st of September, 1847, to the 15th of August, 1848, was only 178,782 barrels. If this statement be correct—and we have no reason to doubt of its truth—we conclude that the exports for the last twelve months have not exceeded the annual average of the last fifty years.

To show the progress that we have made towards securing the wheat market of the world, we have made an average of the exports from the United States to all countries, during the ten years ending with 1799; and also the ten years ending with 1839, and find the annual average for the first period to be 4,088,137 bushels, and that of the second period to be 4,410,556 bushels—being an increase of about 8 per cent. in forty years. But, if we take into consideration the increase of population in the wheat purchasing countries, it will appear evident that we supply them with a less proportion of their imports for consumption now, than we did during the ten years immediately preceding the present century. With these facts before us, and being totally ignorant of any change in our favor, which will enable us now, more than formerly, to compete successfully with Russia, and other wheat growing countries of Europe, we never could have comprehended the process of reasoning by which the Commissioner of Patents arrived at his conclusion, but for his estimates of the cost of producing wheat in this and other countries.

If the wheat growers of the United States, enlightened by the calculations of the Commissioner, should realize the result which he so confidently predicts, he will be entitled to the profound gratitude of the nation; and this discovery of his may be considered as the most important of the age. For it would seem that, owing to their ignorance of the fact that they could deliver wheat in Great Britain cheaper than could the producers of any other country, the wheat growers of the United States have annually lost the sale of many millions of bushels of grain; and the dealers, also, have lost the most brilliant chances of speculation which were ever offered to the lovers of enterprise.

But, unfortunately for American wheat growers, the Commissioner's figures do not embrace the entire subject; for, in working out this problem, it is necessary to consult other branches of science besides arithmetic. A knowledge of geography, history, and political economy, is also necessary; and we must especially take into account the nature of the political and social institutions of different countries, before we can determine which can afford to sell the products of their labor at the lowest price, in a foreign market.

In a community where a small number of individuals receive the profits accruing from the labor of the great mass of operatives, they can always afford to

undersell the inhabitants of a country where every one enjoys the privilege of disposing of his own time, and of appropriating to his own use the products of his labor.

The existence of slavery in civilized countries, depends mainly upon the profits which accrue from agricultural labor; and, if there was no market for the products of slave labor, the relation of master and slave would cease to exist. For few individuals would subject themselves to the cares and responsibilities incident to this relation, were it totally unproductive of profit.

To render slave labor profitable, it must be employed in the production of commodities for exportation; for slave holders in the same country are not consumers of the products of each other. And hence the necessity of directing the labor of slaves to some one, or to a few, staples, that will bear transportation to distant markets; and, as long as these staples will pay any profit, no matter how small it may be, the master will continue to produce them. For, in these profits consists the value of his slaves; and, could he find no market for his staples, he would abandon his slaves as useless.

We have an illustration of this principle in the history of cotton growing in the United States. We remember when intelligent cotton growers believed that they could not afford to grow cotton at ten cents per pound. It has since sold for less than five cents, and still they continue to produce it; and, should it fall to two cents, it would not materially affect the quantity now produced, though it might prevent its increase. We base this opinion upon our knowledge of the fact that, in much the larger part of the cotton growing district, no other staple, at present known, can be produced, that would prove more profitable; and such is the predicament, especially of Russia, in regard to wheat growing. It may startle some of our philanthropists, when they are told that there are more slaves in Russia, than in, perhaps, all the world besides. To show the number and condition of the slaves in Russia, we extract the following account from McCulloch's Geographical Dictionary, a work of acknowledged authority. Having noticed the nobles, clergy, and merchants, he says: "Unhappily, however, the far largest portion of the people of Russia are *slaves;* belonging either to the crown, or to individuals; about twenty-one millions being the property of the former, and twenty-three millions of the latter. Count Cheremetief is proprietor of above 110,000 slaves; and the numbers of those belonging to some of the other great landholders, are but little inferior. The nobles are obliged to pay a tax to government, (at the rate, generally, of about four roubles per male,) and to furnish recruits for the army, according to the slave population of their estates. The time and labor of the slaves belonging to private individuals, are absolutely at the disposal of their masters, who may seize whatever property they may happen to acquire. The most common practice is, for the latter to impose on their peasants an abrock, or capitation tax, which may amount, of an average, for those resident in the country, to from thirty-five to forty-five roubles per *male*, young and old;

but those who have received licences to reside in towns, or who have learned any profession, or have been successful, are charged far greater sums; sometimes even as much as a thousand roubles a year or upwards! Others, instead of an abrock, perform task work; others, again, deliver a certain portion of their produce; and from some, all these are demanded. Runaway slaves are punished by imprisonment and hard labor.

"Besides having power to dispose of his time and labor, the master may inflict *corporeal punishment on his slaves;* but he is forbidden by law(which, however, is often evaded,) from treating him with any great cruelty; and he is guilty of a capital offence, if death arise from his chastisement within *twenty-four hours*. When one class may exercise such power over another, very great abuses cannot fail to exist. The insecurity, too, under which the peasants are placed, is necessarily fatal to their industry. Oppression and ill-treatment are now, however, a good deal less common than formerly; and it is certainly true that the condition of the boors is, by no means, so bad as might, *a priori*, be concluded; and that, as respects their command over the necessaries of life, they are in a much better situation than the peasantry of Ireland.

"Those on the estates of humane and enlightened landlords, are in decidedly comfortable circumstances; while they mostly all have sufficient supplies of the articles they consider necessary to existence. Some licensed slaves have accumulated very large fortunes. One of this class of persons is mentioned as having 4,000 laborers in his employment; and another planned and built the finest church in Petersburg.

"The peasants are of a sound constitution, stout and firmly built, and generally of a middle stature. They live in wooden cottages, formed of whole trees piled upon each other, and built together in villages, the gables to the road. Sometimes they consist of two stories, but more frequently only of one. They are heated by stoves, and though dirty, are not uncomfortable, nor ill-suited to the climate. Their furniture consists, generally, of wooden articles, with a pan or two. Beds are little used; the family generally sleeping on the ground, on benches, or on the stoves.

"The dress of the peasant consists of a long coarse drugget coat, fastened by a belt around the waist; but, in winter they wear a sheep-skin, with the wooly side inwards. Their trousers are of coarse linen; instead of stockings, woolen or flannel cloth is wrapped round the legs, and boots or shoes of matted linden bark are frequently substituted for those of leather. The neck, even in winter, is bare, and the head is covered by a peaked round hat or cap."

In this account of the relation which exists between the Russian peasant and the land holder, we find enumerated all the badges that denote slavery of the most absolute character, with the slight exception that the owner may not *immediately* take the life of his slave, with impunity; but, if he survives the punishment inflicted by the master for the space of twenty-four hours, it would seem

that the latter is not accountable for his death. The author says: "The time and labor of slaves belonging to private individuals, are absolutely at the disposal of their masters, who may seize whatever property they may happen to acquire. And, again, "the master may inflict corporeal punishment on the slave; but he is forbidden, by law, (which, however, is often evaded,) from treating him with any great degree of cruelty." Every thing here mentioned to show the comfortable condition of the Russian peasant, may be affirmed with truth in regard to the condition of slaves in the United States, except that licenses are not, perhaps, as common in this country as in that; but this can be of little benefit to the slave, when the master may, at his pleasure, seize all the property which he acquires.

And, furthermore, we are informed that in Russia land is of no intrinsic value. We quote from a document prepared by a Russian nobleman, published in the *London Economist*, and adopted by the Commissioner of Patents, as a part of his report. The author says: "Agriculture, in Russia, is still in its primitive state, though the number of products, and their quantity, is great, no province furnishes more than one-half of its natural capacity. For this reason does the soil, in *by far the greater portion* of Russia, possess no real *intrinsic value;* the latter depending *entirely on the labor of man*—so that, instead of asking the number of acres, the number of hands that belong to it, form the measure of its value. The best cultivated provinces of Russia are on the Baltic, in the provinces adjacent to Moscow, and in the Russian provinces of Poland; and even in these provinces are to be found immense districts, of which not the fifteenth part is, as yet, taken into cultivation." Here is a practical combination of "free soil" and slavery. And we ask if there is any individual who can, with these facts before him, arrive at the conclusion that the freemen of the United States, cultivating land valued at from ten to fifty dollars per acre, can produce wheat in successful competition against 44,000,000 Russian slaves, who subsist principally on rye bread and porridge, clothe in sheep skins, sleep on the ground, and labor on land, which costs their masters nothing?

Such a conclusion would be absurd in the extreme; and, moreover, it may be safely affirmed, that, but for the duty imposed on the importation of wheat into this country, Russia would successfully compete with American wheat growers, in our own markets.

The production of a staple for exportation is opposed to the genius and economy of free labor. It is calculated to turn both labor and capital into one channel, and tends to make the staple growing districts dependent on other countries for almost every commodity of convenience and comfort. But there is a portion of the American people, so ardent in search of foreign markets, that they seem to overlook both facts and reason, and appear incapable of comprehending the most obvious and simple principles of political economy. Their delusion, in this respect, is not less absurd than was that of the Alchimists in searching for the Philosopher's Stone; and, could they accomplish all they so much desire, success

would tend to destroy, rather than promote, the prosperity of the country. We should have regarded the Commissioner's estimates of the surplus of wheat as extravagantly large, but for the quantity drawn into market by the high prices of 1847. This incident has established the fact, that an immense amount of the products of the labor of this country perishes, or is wasted, annually, for lack of a demand. And if, without any notice or preparation for a foreign demand, we could turn out over 26,000,000 bushels of wheat, in the short period of a few months, what could we not do if the demand were to continue for years in succession?

We commend the diligence of the Commissioner of Patents, in seeking a market for our surplus grain; but, with all his industry, he has shown that all the wheat purchasing countries require only about 33,000,000 bushels. And, if we should suppose that they needed an equal quantity of all other kinds of grain, and that we should, to the exclusion of the rest of the world, supply the entire demand, yet there would remain a surplus of 158,384,502 bushels—a quantity equal to the labor of 316,769 individuals, supposing them to produce 500 bushels each—and sufficient to sustain a population of 15,800,000, allowing 10 bushels per annum to each individual.

These estimates appear so enormous that we can scarcely believe them true; but, when we consider the quantity of grain which we exported in 1847, and that there was still an immense amount left in the country, we conclude that the calculation in regard to wheat, cannot be deemed very extravagant. But, if we should abate one-half the quantity, it would still appear that the labor of 158,384 individuals, employed in grain growing, was lost for want of a market, even after supplying the entire demand of all the grain purchasing countries.

Having shown conclusively, as we think, that it is impossible to find a foreign market for but a very small portion of our surplus grain, let us now enquire whether it is practicable to create a demand at home, equal to the supply. We have so frequently urged the importance of building up a home market for our breadstuffs, by encouraging manufactures, that we begin to fear that our readers may suspect that we are insane on this subject. And, having hitherto relied on our own reasoning, we now beg to fortify the arguments which we have so frequently urged, by the opinions of others.

In a letter from Gen. Jackson to Dr. L. H. Coleman, of North Carolina, dated in 1824, he asks: "Where has the American farmer a market for his surplus produce? Except for cotton, he has neither a foreign or a home market. Does not this clearly prove, when there is no market at home or abroad, that there is too much labor employed in agriculture, and that the channels for labor should be multiplied? Common sense at once points out the remedy: Draw fram agriculture this superabundant labor; employ it in mechanism and manufactures—thereby creating a home market for your breadstuffs—distributing labor to the most profitable account—and benefits to the country will result. Take from

agriculture in the United States 600,000 men, women, and children, and you will, at once, give a market for more breadstuffs, than all Europe now furnishes us with. In short, sir, we have been too long subject to the policy of British merchants. It is time we should become a little more *Americanised;* and instead of feeding the paupers and laborers of England, feed our own; or else, in a short time, by continuing our present policy, we shall be paupers ourselves." Here is the answer to the inquiry with which we set out in the commencement of this article; and, in our opinion, it is the only true answer that can be given to it.

Mr. Jefferson says, in a letter to Benjamin Austin, in 1816: "We must now place our manufacturers by the side of the agriculturalist." * * * And, again, "The grand inquiry now is, shall we make our own comforts, or go without them, at the will of a foreign nation. He, therefore, who is now against domestic manufactures, must be for reducing us either to a dependence upon that nation, *or be clothed in skins, and live like beasts, in dens and caverns. I am proud to say, that I am not one of these. Experience has taught me, that manufactures are now as necessary to our independence as to our comfort.*"

It is true that we are less dependent upon foreign countries now, than in 1816; but we are yet very far from being independent of their labor and skill, while at the same time, we have a surplus annually perishing on our hands, nearly equal to the entire amount of our imports from foreign countries. This is the main point to which we desire to call the attention of our readers, and we ask whether we shall continue to waste our labor and wear out our soil in producing an overplus for which there is no demand, either at home or abroad, when it is completely in our power, by "placing our manufacturers by the side of the agriculturist," to secure to the latter a market and remunerating prices for all our products? This policy would secure to us not only that independence so much desired by Mr. Jefferson, but would at once enable us to control the commerce of the world. But the moral effects would be more important still. Inadequate prices for labor, and the uncertainty of finding a market for its products, are abundant sources of social evil. To these causes may be attributed, in a great measure, the spirit of traffic and speculation which so strongly characterize the American people; and hence, also, one cause of idleness and all the vices which proceed from it. We invite the reader to call to mind the many individuals of his acquaintance who have failed in trade, and who, with their families, have been driven to want the common comforts of subsistence; suffering too, although it may be unjustly, under the imputation of dishonesty—bankrupt alike in property and reputation—shut out from the sympathies of those who were sometime their friends, and, to say nothing of their own unhappy condition, now lost to society. Trace their history back to the commencement of their career in life, and it will be found in a majority of cases, that a superabundance of labor was the cause of their becoming traders and speculators.

Instinct, perhaps, more than reason, lead them to abandon a pursuit in which

so much labor was lost; but alas! the evil is not limited to the agriculturalist—it is even more fatal to the merchant; and how could it be otherwise when he deals in commodities that are so redundant that the demand can never equal the supply. Local and temporary causes may sometimes enable him to make a profit, and if, like a dextrous gambler, he should stop at the right time, he may retire without loss; but where the chances are so much against him, he must lose in the end. For in this country, it may be safely affirmed, that the dealer in produce, who all the time trades to the extent of his means, must, in the end, fail with as much certainty as if he bet at a game where the chances were fifty per cent. against him. And owing to the same cause, the dealer in general merchandise is in a condition but little better than the dealer in produce. The fabrication of foreign commodities, which constitute a very large portion of the merchandise which we consume, depends in so small a degree upon our agricultural products, and the source of supply having little or no relation to our means of purchasing, the dealer can not, in the nature of things, always regulate his purchases according to the demand; and hence, the chances are necessarily against him, and he too, as well as the dealer in produce, must fail in the end. This proposition is fully established, we think, by the mercantile history of this country. We have not the statistics before us, but we have often seen it stated, that even in Boston, about ninety-five out of every hundred merchants fail in business; and as long as we purchase so large a portion of our manufactured commodities from foreign countries, perhaps no individual could deal in them to the full extent of his means, without being ruined in the course of a lifetime of reasonable length.

If the labor of the country was so divided that the manufacturing and other classes should consume all or nearly all the surplus of the agricultural products, this would establish a relation between the sources of supply and demand, that would relieve every branch of industry and trade from that great degree of uncertainty which now attends them. This would place every branch of business upon an equal footing, and tend to reconcile each individual to their respective employments. It would remove the temptation to speculation, give constant employment and adequate remuneration to all, while it would also encourage the idle to habits of industry. And more than all this, it would put an end to the daily occurrence of bankruptcies and disappointments in business, which induces so much individual suffering, and deprives society of the usefulness of so many of its members. All this could be effected, and still leave a surplus of grain quite equal to the foreign demand, while our exports of manufactured commodities would be enlarged almost to an indefinite extent.

Before closing this article, we feel constrained to notice a paragraph in the Merchants' Magazine of September, 1848, at page 306, which is, in our estimation, calculated to mislead the public mind in regard to the extent of the foreign demand for breadstuffs, and to divert the American people from considering the

importance of building up a market at home. After showing the comparative values of wheat, oats and potatoes, as articles of food, he says: "From this it appears that one acre planted in potatoes, will support as many persons as four planted with oats, or three with wheat. The increased population of Ireland, which rose from 6,036,000 in 1812, to 8,179,359 in 1841, was mostly sustained by potatoes, taking patches from grain lands and planting with potatoes. In the English manufacturing districts, the same process enhanced the quantity of cheap food to the operatives, until it was estimated in 1846, that 3,400,000 acres were planted with potatoes, yielding 30,600,000 tons of food. Of this, 60 per cent. perished by rot, and the cultivation of potatoes has been abandoned to an extent which requires an addition of at least 150,000,000 bushels of grain to her annual harvest." Now, it is quite evident that these estimates are made upon false data. From a return published by the House of Lords, it appears that the quantity of grain and flour taken out of bond for the ten years preceding 1846, averaged 19,422,630 bushels annually, estimating flour at 2¾ bushels per 100 cwt. In 1846 the quantity taken out of bond amounted to 44,168,150; in 1847, the year of the greatest scarcity, the quantity amounted to 84,970,772 bushels, being an increase of 65,548,142 above the average of the ten years preceding the year 1836; and the amount taken out of bond in the first seven months of the present year, was 22,980,948, and if the consumption of the balance of the year should continue in proportion to the first seven months, the quantity of grain taken by Great Britain for consumption this year, will amount to 39,395,901 bushels being only 19,973,271 bushels more than the average of the ten years immediately preceding 1846. Thus it will be seen that the entire amount of grain taken out of bond in the years 1846, '47 and '48, is only 110,266,933 bushels more, than the average of the ten preceding years. Nor would it be possible for Great Britain to sustain her population for even two years, if she was under the necessity of importing 170,000,000 bushels of grain annually. Indeed, it would employ a very large portion of the shipping of the world to transport it, and nothing but the charity of other nations could save the country from a more dire famine than has ever been recorded in the history of man.

ART. II.—WHEAT GROWERS' ASSOCIATION OF ST. CHARLES COUNTY.

CHEROKEE ROSE—OSAGE ORANGE—IMPORTANCE OF AGRICULTURAL ASSOCIATIONS—ST. CHARLES ROAD, ETC.

THERE are few things more important in the practical economy of the Western States than the discovery of some plant suitable for live fences. Having long entertained this opinion, we read with great interest a communication from T. Affleck, Esq., of Mississippi, on the

Cherokee Rose, which appeared in the "Commercial Review," of February, 1848; and, though doubtful whether it would succeed in Missouri, we transferred the article to the pages of our Journal, not knowing at the time, whether it had ever been planted in this part of the country. The experiments of Mr. Alderson, which are mentioned in the following communication, leaves us without hope that this beautiful plant can be made useful in our climate; and hence it affords us the more pleasure to learn that the Osage Orange is not affected by the frost of our winters. This is a stronger plant than any that has been hitherto cultivated in this country or Europe for the purposes of hedging; and if its branches can be trained sufficiently near the ground to turn hogs and other small animals, it must, we think, prove sufficient in strength to turn every other kind of stock. It possesses great beauty in both the form and color of its foliage, and when in fruit, is altogether a pleasing object to the eye. We have been informed that the foliage is most excellent food for silk worms, and that it has been ascertained by chemical tests that it contains a larger proportion of the properties requisite for the production of silk than any other foliage that has been used for that purpose. We should be pleased if such of our readers as have planted the Osage Orange, would communicate the manner in which they treat the seed before planting. Whether they plant them dry, or soak them in either cold or warm water? And also, when is the best time to plant? Should the seed be planted in nurseries, or should they be planted where it is intended that the tree should form the hedge? How far should they stand apart in the hedge, and when and at what height should they be topped or headed down? Answers to these inquiries, with such observations in regard to the economy of growing the tree as have been noted in this climate, will tend to encourage its introduction, and extend its usefulness.

We beg to acknowledge our obligations to Mr. Alderson for the paper containing the report of the "Wheat Growers' Association of St. Charles County." The first part of the report, having reference to matters merely local, we publish that part only, which relates to the economy of constructing a McAdamized road from St. Charles to St. Louis, and upon this subject the views of the committee appear so clear, and their arguments so just and well arranged, that any remarks from us would be superfluous. Yet, seeing that the subject is so justly appreciated by the intelligent farmers of St. Charles county, one can

scarcely imagine why some efficient steps have not been taken to carry the work into effect. It cannot be owing to a want of means, for by the showing of the committee, the surplus products of St. Charles county amount to about double the cost of making the road, and we think there can be little doubt but that the road stock would yield a better profit than money invested in farming, where the facilities of transporting the produce to market are so limited. But the profit on road stock is a matter of small consideration when compared to the advantages to be derived from the improvement, and the additional value which it would impart to real estate, as well as to its products. The dairies, the orchards and gardens of St. Charles county, can all find a market in St. Louis, and with proper facilities, they could compete successfully with those in the more immediate neighborhood of the city, where lands are worth from fifty to one hundred dollars per acre.

We sincerely trust that this enterprise will not be allowed any longer to slumber, and we feel assured that if a few influential and energetic individuals will take hold of it in earnest, that the means can be raised in time to begin the work with the opening of next spring.

The Association of the Wheat Growers of St. Charles County, is an institution highly worthy of commendation. Every other profession and calling have organized associations for the purpose of fraternizing the individuals who belong to their respective pursuits; and also, for the further object of watching over and giving the best direction to the common interest of each, while the farmers, especially of the west, seem to suppose that their interest will take care of itself. But we say to them, in unqualified terms, that this is a fatal delusion; for those engaged in all other pursuits, derive the means of subsistence, either directly or indirectly, from agricultural labor, and their instincts lead them to appropriate to themselves the largest amount of agricultural products at the smallest cost. None, of all these, except the politician, even profess to consult the interest of the farmer, nor would any reasoning mind expect them to do so. While the politician, even allowing him to be honest, is generally, of all other men, the least capable of giving a wise direction to the policy of any pursuit in the country. His instincts lead him in pursuit of office; this is his vocation, and finding party discipline a more potent agent than his own reason, he dares look on but one side of a subject, lest he should be

convinced of his errors, and his conscience, enlightened by reason, should beguile him into the path of truth. It is not a simple question of policy, but it is the *duty* of the farmers, as a class, to organize associations and appoint committees to examine thoroughly, every thing connected with their own interest, paying no regard to the political opinions of any party; and when they shall have ascertained their true interest, according to the best lights before them, then let them act in concert, and whether the consummation of their object requires the agency of capital or legislation, it will be in their power to control either, or both, if necessary. And there need be no conscientious scruples entertained lest the interest of other pursuits should suffer by their action; for it may be safely affirmed as an axiom, that the policy which promotes the true interest of the agriculturalist, embraces and promotes also, the best interest of those engaged in every other pursuit, whether industrial or commercial.

To the Editors of the Western Journal:

I have, so far, read the Western Journal with much interest, and especially those articles under the head of "Artificial Agents of Exchange." The seven main propositions are proved beyond all cavil, to the candid and unbiassed mind; and it is to be hoped that the people of the west will become awakened to a sense of their true interests and enter largely into manufacturing generally. The nearer the market, or the more convenient the producer and consumer to the manufacturer, the better for both parties.

As you are devoting some interest to hedges, I would remark, that I know something of the Cherokee Rose, as such, and that in the south it forms a most admirable obstacle, both to the ingress and egress of either stock or vermin.

In February, 1845, I brought with me from Natchez, a few roots, cuttings and seed of the Cherokee Rose, which I planted out with a view of forming a hedge. Not one of the seed ever came up—the cuttings all died in the course of the summer, and but one root survived the winter, to put out leaves the next spring, and this one died in the summer of 1846. In March of 1847, I brought with me again, from the south, the roots of the Cherokee Rose, but none of them survived the winter of '47 and '48. At the time of setting out my first Rose cuttings, &c., I planted out some figs, which, with slight protection, are still living, and have borne three crops of fruit. I am now, as

well as several of my neighbors, raising the Osage Orange for hedging, which in three or four years, it is thought, will turn all kinds of stock.

As you are in search of statistics, and all things else that are profitable and useful to the community in which we live, I send you No. 18 of Vol. I, of the Missouri Farmer—now extinct—in which is a report of the Wheat Growing Association of this county. It contains some statistics which may prove useful in the labors of your department. Respectfully, &c.,

B. A. ALDERSON.

Winfield, St. Charles County, (Mo.) Sept. 23d, 1848.

"Intimately connected with the transportation of produce from St. Charles and adjoining counties lying north of the Missouri, to the city of St. Louis, is a well constructed McAdamized road, and as an inducement for attention being turned to this subject, we have taken some time and care in ascertaining the probable amount of the surplus produce of St. Charles county, much of which goes to waste for want of proper facilities for transporting to market.

1st. Allow us in the first place to premise by saying, that until a good McAdamized road be constructed between the points above named—St. Louis and St. Charles—the farmers of St. Charles and adjoining counties cannot avail themselves fully of the high prices at all seasons of the year, no matter what *combinations* may be formed for the shipment of produce by the way of the two rivers. For we look upon this as a settled principle, that in order to realize the most advantageous prices for our surplus products, at all seasons of the year, transportation by the rivers, and upon a good turnpike road, must go hand in hand.

That, when a small amount of produce is to be forwarded, and a sufficient inducement is not offered in St. Charles to stop it there, the farmer may pass through and avail himself of the travel over a good road, where there will be neither stalling, prizing out of mud holes, nor sand banks, as is the case at the present time. This will render the small farmer as independent with his wagon, as the large one is with his boat load of produce. We say that we want the two modes of transportation—that the turnpike is essential to the promotion of our true interests—it will afford to us the choice of markets, and place us above the reach of imposition.

It cannot be supposed that St. Charles can purchase all the produce which would naturally pass through there. She would purchase to the extent of her wants for consumption and manufacture, and when forced to go beyond her immediate necessities, of course it would be at reduced prices; and who of us in the country, farmers or mechanics, would not do the same thing?

Then, brother farmers, we must not deal harshly with the citizens of St. Charles for doing the very thing which we would be guilty of, if placed in their situation, and in which thing, in fact, they are governed by the first law of nature—self-preservation.

2d. *Products of St. Charles County.*—The following is an approximate statement of the surplus products of St. Charles county, with their prices and value attached, together with the tonnage and probable travel over the road at the present time:

Wheat, 60,000 bushels at 60 cents,	$36,000
Corn, 100,000 bushels at 20 cents,	20,000
Oats, 25,000 bushels at 20 cents,	5,000
Barley, 5,000 bushels at 50 cents,	2,500
Rye, 3,000 bushels at 45 cents,	1,350
Potatoes, 2,000 barrels at 75 cents,	1,500
Apples, 8,000 barrels at $1 25,	10,000
Cheese, 30,000 lbs at 7 cents,	2,100
Butter, 25,000 lbs at 12 cents,	3,000
Eggs, 20,000 dozen at 5 cents,	1,000
Poultry, 3,000 dozen, at $1,	3,000
Hogs, 6,000 at $5,	30,000
Cattle, 2,500 at $15,	37,500
Tobacco, 600,000 lbs, part manufactured,	21,000
Hemp, 100 tons at $50,	5,000
Bagging, 10,000 yards at 25 cents,	2,500
Twine, 10,000 lbs at 30 cents,	3,000
Brooms, 3,500 dozen at $1 25,	4,375
Beans and Peas, 1,000 bushels at $1,	1,000
Washed Wool, 8,000 lbs at 20 cents,	1,600
Cider, 2,000 barrels at $3,	6,000
Horses and Mules, 600 at $30,	18,000
Sheep, 1,000 at $1 50,	1,500
Hides, 2,000,	2,500
Cabbage, Kraut and Sundries, say,	1,000
Total,	$220,425

Estimated tonnage of the above produce, as made by calculation, 14,076 tons, which, at 800 pounds per horse, would require to haul it to market, 35,190 horses.

We may safely double the above tonnage and horses for adjoining counties,

and those adjacent thereto, and we have for the tonnage 28,152 tons, and the horses required in the transportation, 70,380.

And from an estimate made, based on the receipts of the Ferry Boat at St. Charles, we may add to the above, travel of all kinds, for northern and western Missouri, equal to 30,000 horses; which, added to the above, gives a grand total of 100,380 horses, traveling over this road at the present time. And this business must continue to increase in a regular and rapid progression for many years to come.

3d. *Turnpike between St. Louis and St. Charles.*—From St. Louis to the Missouri river opposite to St. Charles, we will assume at the distance of nineteen miles; and the cost of a well constructed turnpike road, say at $6,000 per mile, which will give for the total cost, $114,000; and to this may be added $10,000 for ferry and toll gates—making total cost $124,000. For we hold it to be almost essential to the well being of the road and travel thereon, that it have its own ferry in connection at St. Charles, and that this ferry serve as one of the toll gates. Two other toll gates, one near St. Louis, and the other at a point about midway, would, perhaps, be sufficient; and let the travel and teamsters pay at the first gate at either end of the road, for the whole distance through, and take a ticket to be left at the last gate. This would save much time and trouble in making the necesssry change at each gate.

Now, as regards the profits or revenue, to a company: let us take the whole cost, $124,000, and

100,000	horses at	5	cents,	in one direction,	$5,019
do.	do.	10	do.	do.	10,038
do.	do.	15	do.	do.	15,057
do.	do.	20	do.	do.	20,076

But it must be borne in mind, that the greater portion of this travel will pass in both directions, going and returning. And this is without including any travel for the county of St. Louis, which would be very considerable.

From the above exhibition, it would appear that with a road and ferry properly ordered and constructed, the present charges at the St. Charles ferry would about be sufficient for both ferriage and toll on a good McAdamized road.

4th. *Benefits to be derived from such a work.*—The construction of good roads from a commercial city into the interior of an adjacent country, gives an impetus to the energy and industry of its inhabitants far beyond, in a general way, the terminus of such improvements; and from the experience gained by other cities and sections of country in the east, as well as in the west, it is well known that the transportation and travel, in many cases, very soon doubles, thribbles, and even quadruples the ordinary amount of business on common roads—running far beyond the most sanguine speculations.

Were there any such inducement to the people of St. Charles and adjacent counties, as an easy and safe communication with St. Louis at all seasons of the year, it would operate as an inducement for emigrants to settle on our fertile lands, which are now lying waste; and thus give a new impulse to an increase of population. But to say nothing about an increase of population, the present cultivators would probably double the amount of their exports. At present, the inducement does not exist, which is necessary as a stimulant to an increased energy. Let the city of St. Louis do her part towards providing facilities for easy communication with the interior, and she may be greatly relieved of those sudden high prices which occur upon a change in the condition of the roads from dry to wet, and from dust to mud, knee deep to a horse, and especially when navigation is partially suspended by low waters in the upper rivers, or entirely closed by ice.

Good roads are to a city and commonwealth, what the arteries are to the body and heart of man. In either case, without an easy and free communication with the extremities, the whole system becomes diseased and enervated. With a city in a country like ours, her prosperity, if not her very existence, greatly depends on her being well provided with good roads. All of which is respectfully submitted.

B. A. ALDERSON, *Chairman.*

ART III.—EDUCATION.

In the September number of the Western Journal we gave the outlines of a system of public education, designed to embrace such individuals only as should be found destitute of the means of educating themselves. Looking alone to the consummation of an important work—one upon which, in our estimation, depends in a great measure the social happiness of man—we are indifferent in regard to the particular manner of carrying it on, provided any system which may be adopted shall not impose unnecessary burthens upon those who are taxed to support it. We are not desirous of being considered projectors of systems, and our scheme was thrown out more for the purpose of eliciting discussion, than with an expectation that it would meet the general approval of the public; and we are therefore the more gratified that it has had the effect of drawing a valuable paper from the President of the Board of Public Schools in St. Louis. The lively interest which that gentleman is known to take in the subject of education—the patient industry and indomitable perseverance with which he has long labored to promote this important object—entitle his

opinions to more than ordinary consideration. But while we commend his views* to the consideration of our readers, we desire to submit a few remarks in relation to the objections which he has suggested to our own plan. It appears that a similar system has been tried and proved unsuccessful in Virginia; and in reference to its failure there, the author says, "That happier results will follow the same system elsewhere, we cannot expect, because the very idea of being a pauper, and treated as such, is revolting to every man, woman and child of sensibility. However kindly and humanely the views of those who advocate the poor system may be, their labors must be in vain as long as humanity remains what nature has made it. As long as there is a manly feeling, an ennobling thought, the individual will shrink from personal degradation."

We admit that there is much force in these remarks, and the objection is serious and formidable; but we do not look upon it as insurmountable. It is not an inherent principle of man's nature that induces a sense of degradation whenever he receives a benefit from the State. So far from this being the case, there is perhaps no earthly thing that a very large portion of the human family so much covet as public benefits; and we have all known many individuals who have not scrupled to base their claims to office upon their poverty, as well in canvassing before the people, as in their applications for executive appointments. We must therefore conclude that, this sense of degradation which arises upon the reception of benefits from the State, is owing to accidental causes, and may consequently be prevented. Wherever it does arise, it may generally—if not always—be attributed to a mistaken notion of public opinion; and it may be affirmed that no one in the State of Missouri, whose opinion is worthy of the slightest degree of respect, would esteem an individual degraded because he had been educated at the public charge, provided no unfair means had been used to obtain the necessary appropriation. And if those whose condition requires public assistance were made sensible of this fact, then the cause of this morbid sensibility would cease, and it would be considered as reputable to solicit a place in the public schools on the ground of poverty, as to canvass for an office for the sake of its emoluments.

If it be true that this extreme sensibility does exist to the extent supposed, then let the system provide the means of removing it. Let

*Vide page 510.

the State be divided into convenient districts and appoint competent individuals to enlighten the general mind upon the subject, and if all good men will approve and give countenance to their exertions, we believe that this formidable objection would soon be overcome.

But, we ask, does not the same objection exist to that system which proposes to educate all the children in the State at the public charge? For in such case the poor would still receive their education from the bounty of the State, and we think that it would require a mind of more than ordinary powers of discrimination to perceive the reason why one would be degraded either in his own estimation, or in the opinion of others, by receiving his education from a fund especially assigned for that purpose, and yet be considered respectable at a school supported at the public charge, and towards which he had contributed nothing. In both cases he would attend school with those whose pecuniary condition was better than his own; but in neither would he pay anything, and his poverty would be as apparent in one case as in the other.

We wish to be understood as offering no objection to the system which proposes to teach every child in the State at the public charge; and if the legislature has nerve enough to provide the necessary means it will meet our most hearty approbation; but if that body should fail in this, we still hope that our plan of educating the poor may receive a favorable consideration. No plan, however, can be carried into efficient operation until the public mind is prepared to receive it—and the success of any system will always depend upon the zeal and vigilance of those who are appointed to carry it into effect.

We notice this subject now, lest it should be supposed that we have abandoned our former views as being impracticable. They were adopted in the beginning, as a substitute for a more thorough system; one, in substance, similar to that preferred by the President of the Board of Public Schools in St. Louis; and we were induced to limit our views to the plan submitted, from an apprehension that there was but little probability that the legislature would be willing to raise a revenue sufficient to carry into operation an efficient and thorough system; and we were unwilling to hazard every thing upon our own plan. We still occupy the same ground, and reiterate the opinion that the subject addresses itself to the conscience of every member of the legislature, and that they are bound by their official oath to provide, in some way, for the education of the poor.

ART. IV.—THE NORTH AMERICAN INDIANS.

A CHAPTER FROM A FORTHCOMING WORK BY J. LOUGHBOROUGH, ESQ., OF MISSOURI.

Author's Opportunities—No Scientific Classification—Differs from Others—Reasons why Indians have been so much misrepresented—Censure of their Maligners—Criticism upon certain Authors—Picture of a War Party—Of a Village Scene—Of a Religious Devotee—Motive in drawing these Pictures—Speculations on their former Condition—Universal Traits of Savage Tribes—Several Stages in the Progress of Civilization—Distinction between Savage and Civilized People.

In writing of the various Indian tribes occupying the great western territory, we would desire to be understood as speaking with much diffidence. A German traveler, who should visit the United States, without a knowledge of the English language, even with the assistance of the numerous countrymen he would see in all parts of the Union, would find himself at a loss to communicate to a European public, many of our ideas, habits, customs and peculiarities. In a lesser degree, this is the position of the author as respects the Indians. Their communities being small, their modes of life more simple and obvious to the spectator, and there being much less of intricacy and privacy in all their habitudes, than there is in an old and civilized community where education, science, and the arts have multiplied the objects of contemplation, the task of penetrating the philosophy of their existence and eviscerating the truth, is much easier of accomplishment, and requires far less of qualification in the observer, than in the case supposed. Few of those who have preceded us in this attempt, have been more fortunate in this respect than ourselves. Their reliance for the valuable truths they have communicated, has been principally upon personal observation of facts, and judicious inductions from them—rarely having had the assistance of competent interpreters through whom they could address inquiries in cases where the facts did not explain themselves. The only advantages we possessed were, that we felt a sincere desire to ascertain the truth for its own sake, and for the gratification of our own curiosity; that we traveled through the country without any connection with the trade or business of it; that our time and thoughts were consequently occupied in this as the leading object of interest; that we associated freely with traders, trappers, freemen and Indians, at all times, under all circumstances, in the forts, in the mountains, on the plains, and in the villages of permanent and wandering tribes; in hunting, fishing and amusements; that we did not hastily take for granted the facts we design communicating; but upon every opportunity repeated our questions, and subjected the matter to the test of multiplied inquiries through various individuals, and to comparison with considerations derived from various sources; that we took notes at the time, many of which we have preserved, but some of which are unfortunately lost; and finally, that we have conversed much with intelligent individuals who have visited the country, and elicited many facts which escaped our own observation, and have embodied the facts thus gathered in the following narrative.

In it we have also interspersed many anecdotes, traditions, and circumstances, illustrative of the main narrative; but the tone of the narrative itself, the positions in which they are found, and the whole context will indicate to the reader the degree of credence due them, and our own estimate of their value. They have been inserted because, otherwise, the narrative would be necessarily dull, and have the air of a regular dissertation; and this we have deemed it expedient to avoid in a work addressed to the general reader. But the facts themselves are in no wise shadowed by them, but on the contrary are greatly elucidated and brought in bolder and more distinct relief.

We have not attempted a philosophic classification of the topics treated of, because we do not consider it desirable in itself, nor practicable, if desired. With such a multitude of objects presented to the mind, who could undertake to trace all their connections, their points of resemblance and contrast, and distinguish between casual and accidental associations, and scientific relations and dependencies? We have never seen such a work, and we add confidently, that he who can accomplish it in reference to any distinct people, however humble, will have contributed more to the public instruction, than has hitherto been accomplished by all the writers on the social compact put together. The subjects introduced in the following pages, are therefore introduced in a popular and intelligible order, without any ambitious effort to give them extrinsic importance, or the work itself the character of a learned essay. Should we succeed in conveying a perspicuous and accurate account of the things we have seen and heard, in a manner sufficiently entertaining to tempt the reader to travel with us to the end, our purpose will be fulfilled, and our aspirations amply gratified.

In some respects we shall be found to differ from what has been the generally received opinion regarding the condition, and intellectual and moral qualities of the Indians. On these points our opinions have not been hastily made up, nor, we trust, tinctured with any desire to assume the honor of a discoverer; for probably what may have been true concerning other tribes, is not so of those of which we are treating; and possibly on these points, touching matters and opinions supposed to be common to all Indians, we, as well as others, may have been misled. We can only say that in those particulars our researches have been much more minute, because of the previous impression, and our conclusions are given, not so much with any expectation of acquiring that sort of notoriety sometimes resulting from singularity of opinion, (for we do not covet it,) as from a conviction of their truth, and a hope that if erroneous, others better qualified to judge, may correct the mistake.

Unlike all other people who have filled a bright page in the history of mankind, we have no national infancy, and dim, and indistinct and mysterious traditions to recur to for the materials of romance and poetry, and for allusions to embellish and illustrate our polite literature. We cannot trace our origin back until the light of history fades into twilight, and the light of imagination illuminates a boundless

space beyond, teeming with panoramic views of the wonderful, the heroic, and the beautiful. No expeditions for the golden fleece, or for the foundation or destruction of empires, are presented to us through ancient legends, in which the spirits of supernal worlds hover over and guide the daring adventurers in their toilsome way. No spots are here consecrated in the songs of bards, handed down through countless generations, as the scenes of brilliant victories achieved by exalted patriotism, in the conquest or defence of public liberty; or as the localities first touched by angel feet, with messages of heavenly instruction to point to us the true road to virtue, peace, contentment and happiness. No gothic castles, with towers, bastions, donjon keeps, and solid walls, frown in stern and solitary grandeur from our heights, around which cluster a thousand recollections of chivalrous emprise, splendid banquets and labyrynthine passages, the scenes of dark, mysterious, and sometimes bloody deeds, the offspring of jealousy, ambition or superstition. The Naiads have never disported themselves on our lakes and streams, nor the Dryads wandered through our endless forests. Fairy feet have not moved upon our broad savannahs to the sound of earthly music, pressing with "light fantastic toe," their green velvet carpet, spangled with flowers, with the silver lamp of the moon shedding over and around them a gorgeous drapery of filmy light. We have no dense antiquity, the atmosphere of which reflects the beams of science and exaggerates an illimitable world crowded with gigantic and spectral beings, to whose forms the imagination may attribute innumerable adventures, incidents and catastrophes. Even our historical records are sparse and comparatively barren of exciting topics. Hence it is, that educated as we have been according to the fashion of the people from whom we derive our origin; inheriting their opinions and prejudices, reading their books and studying their philosophy, our minds have received so much of early bias, and have become so prone to direct their energies and powers to the same objects, and the same means of attaining them, that we have not yet fairly discovered how much of original and peculiar advantage has been bestowed upon us by the hand of nature, in our boundless forests, broad lakes, winding rivers and pouring cataracts; nor what there may be of searching interest in the bosom of a society so wonderfully organized and harmonized as ours is. And hence it is, that in no branch of American literature has there been so manifest a failure, as in the attempts to portray Indian life and character; nor has there been in any other so much of gross ignorance, of fantastic conjecture, and unblushing mendacity as has been exhibited in hundreds of publications respecting the religion, the capacity, and the usages of the Indian tribes.

The tendency of our political institutions is to produce a general equality of condition, and therefore Europeans who visit us complain of the monotony and of the want of picturesqueness in our external appearance. It is true that under the remains of the feudal system, the contrasts are striking, and the organization of society presents much more that is brilliant and imposing than with us; but

when the traveler penetrates beneath the surface what does he find? Want, misery, ignorance, corruption, superstition, and meanness of spirit. In striking contrast to all this are the results of the workings of a social democracy. Instead of gorgeous exhibitions of power and splendor in the higher classes, and squalid poverty and slavishness of spirit in the lower, we present a state of things where the utmost liberty, consistent with public order, is constantly developing all the faculties and powers of the individual man, and holding out to each the prospect of acquiring whatever of distinction the advantages bestowed upon him by the hand of Nature may entitle him to. Originality and vigor of individual character is the natural result of our system; the imposing array of classes in which the individual distinction is lost, is the natural result of the European system. Which is preferable? For these reasons we anticipate the time when a new and original literature, adapted to, and in harmony with, our political system and peculiar condition, will supercede that which is now cultivated. Whether this will be accomplished by the slow and steady progress of time, or by the advent of some individual of transcendent genius to point us to the true objects on which to exercise our faculties, we will not undertake to predict. History affords examples justifying either conclusion. In the meantime, and until this great revolution is worked out, we must be content to seek in foreign chronicles and scenes subjects for our pens, or submit to see the truth of history and the integrity of existing facts, violated in bungling attempts to imitate the literature of an old people who have an exhaustless treasure of national traditions to resort to for appropriate themes.

The romance writers are wholly inexcusable for their misrepresentations of Indian character, because their ambition is, or ought to be directed to the attainment of enduring reputations, and they had it in their power to have informed themselves; and if they had done so, they would have obtained an abundant and rich supply of materials without doing injustice to the subject or contributing to mislead and misinform the public mind. As to those who steamboat it out to an Indian encampment, see the boys shooting at a mark with bows and arrows, or the women dressing a skin, and then return and publish a book saturated with diseased imagination and unmitigated falsehood, they have the excuse of stupidity, the love of notoriety, or the want of a dollar to plead; and if it were not for the deep injury they occasion the Indians, a generous public might afford to let them pass with whatever of profit or consequence their lucubrations are calculated to yield them.

The writer of historical romance may, if he please, dissever facts historically united, or join those historically dissevered; or he may even invent characters and facts both; but if he introduces facts inconsistent with the character of the lives and people, or characteristics variant from those of the people he is endeavoring to portray, the harmony of the picture is destroyed, and the spell upon the intellectual reader is broken. Sir Walter, the great founder of the school, was

well aware of these truths, and in no single instance has he done violence to the rules necessarily springing out of them. How would SALADIN look kneeling at a christian crucifix? or a Druidical incantation in a Saracen camp? or the Macedonion Phalanx in the wars of modern Europe? Again, the characters introduced may be exaggerated, and perhaps should be, but no new or imaginary principle of action should be represented as moving them; nor should their own be so far magnified as to run into caricature or be converted into the opposites. In all these particulars the painters of Indian character have most sadly blundered. They have been represented as capable of fixed and steady principles; as possessing ideas of religion and of a God and Providence which would have done honor to the most illustrious father of the church; as animated by the purest patriotism—as models of fidelity and truth in friendship—as moved by the most exalted sentiments in love, in parental duties, and in the council lodge—as addicted to a thousand forms of superstitution of which they never dreamed—as exercising rites and ceremonies analagous to those of the Greeks, and which never entered into their imaginations—and as entering upon war excited by the noblest sentiments of national honor. Their occasional high impulses have been substituted for the general tenor of their character, and the external brilliancy of some phases of their existence imagined to represent their daily lives. Things totally inconsistent with each other, and characteristics entirely fanciful have been so often repeated, and in so many forms, that the learned world who speculate and philosophize in cases where they should be observers instead of gatherers of facts have been greatly misled; and hypothesis without number have been set up to account for matters which never had an existence save in the imaginations of those who paint from conjecture, or who conjecture to batten upon credulity. On these subjects the poets have by the common consent of the world enjoyed an immemorial patent right; but we protest against the violation of it by the writers of historical romance, and more especially by those who attempt to give essays and remarks professedly designed to convey an accurate knowledge of facts. In too many instances this offence has been so glaringly perpetrated as to amount to an implied reflection upon the intelligence and judgment of the reader. A specification of individuals would perhaps be deemed invidious, and probably give rise to controversies as disagreeable to the parties engaged as they would be unprofitable to the public; but we apprehend that those who take an interest in this subject will readily remember many flagrant examples.

He who approaches an Indian village at the moment when a large war party have taken up their line of march into the enemy's country, will be struck with the brilliancy and beauty of the pageant. At a little distance the sounds of their rude and discordant instruments kindle associations intimately connected with classic and chivalrous recollections; and as the stately exhibition moves on, the majestic tread of their fiery steeds caparisoned with beads and dyed quills and hair of bright colors; the erect, manly, and graceful attitude of their riders, in

their profusely embroidered war shirts and leggins, their caps of eagle plumes tinged with variegated hues glittering in the bright sunlight, their flashing spears and battle-axes, and their numerous banners streaming to the wind, or waved in anticipated triumph, causes him to feel himself excited to the highest degree with sympathy for the heroic band; and he pictures to himself a long series of aggravated injuries and insults, perhaps threatening the very existence of a people with whom liberty and nationality are consecrated as holy things, and his imagination is strained to witness afar off the heroic daring of this Spartan band who have devoted themselves to the holy task of guarding another Thermopylæ, or sacrificing their own lives, each upon a hecatomb of their barbarous enemies. So deeply interested is he, and so far has his fancy run away with his judgment and his senses, that he suffers himself to be awakened with the greatest repugnance to the truth and unvarnished reality of the scene. But on nearer approach the splendid delusion slowly dissolves and he beholds—what?

The gorgeous and sparkling drapery instead of being devised to preserve order and discipline, and regularity in movement, and to excite emulation, and a spirit of rivalry in exalted deeds of patriotism, is studiously devised and executed to strike terror and horror into the heart of the beholder, and to engender in the wearer a burning volcano of furious and ferocious impulses, and bloody and ruthless passions. The standards wreathed with flowers and flaunting streamers have each upon their tips a place prepared to affix the scalps of their slaughtered enemies, torn reeking with the hot blood of life, ere yet the convulsed limbs of the victim have subsided into the moveless attitude of death. The slow and solemn chaunt of the war-song breathes out fierce and vindictive denunciations, and the habitations, the wives and the little ones of the anticipated victims are devoted to the flames and to torches unspeakably terrific, and the bloody fragments of their mangled carcasses are promised to the carion bird. As if by the waving of the wand of the enchanter, the spectator sees the images of Michael and the supernal host arrayed in heavenly vestments and panoplied in impenetrable armor in defence of the eternal throne of mercy and justice, suddenly transformed into Satan with his band of accursed and hideous outlaws, carrying murder and devastation into some peaceful and quiet village of weak and harmless beings, crouching in fancied security around their evening firesides.

Again, behold yon aged man bending over the couch of a pale and emaciated daughter, wiping away with his long gray locks the tears which start from his eyes, or pacing with hurried and uneven steps to and fro across his lodge. The medicine man with his decoction of herbs, kneels at her side, commending in repeated phrases, the sufferer to the Great Spirit, and imploring him to resuscitate the trembling powers of life, and restore the flower of the village virgins to health and happiness. Is not the father an object of deep compassion? The last "sole daughter of his house and heart" may ere long pass into the world of spirits and leave his hearth desolate, and his aged frame a bare and leafless trunk, with no

green branch springing from its roots in promise of succession. But look! the gentle mourner turns her anguished head, and the extreme points of a deep wound peep out from beneath the broad band of calico. How came it there? In a fit of savage fury the excited father has struck her with a battle-axe,—the wound has festered and threatens the existence of the moaning innocent. And why mourns he as one who has no hope? A trader, won by the sweet smile of the delicate daughter as she mingled with the romping children of the village, has offered him three gallons of alcohol for her, and the tears of the afflicted father are sadly mingled with apprehensions of the loss of the means of indulging in all the brutal luxury of an Indian frolic.

Once more. A great medicine feast is being held—one grand lodge has been erected as a banqueting hall. Abundance of buffalo meat is simmering in the camp kettles—a fat dog, devoted with many ceremonies, has been slain; the chiefs of the village have assembled to partake of the banquet. The women are actively stirring in preparation for the great festival, and the youths and boys are running and romping in athletic games, or scouring the plains around on their swift steeds. What object is it which attracts the stranger's attention, seated on an eminence afar off? It is a great chief, one who has won in war and many an hazardous adventure, a renown co-extensive with the language and territory of his tribe. He does not contemplate coming down to partake of the hilarious enjoyments of the day. No. He has been seated there for three days and nights, in one unchanged attitude the whole period, deeply engaged in supplication to the Great Spirit, and now as the broad flaming disc of the sun his residence slowly ascends to the zenith, his last fervent aspirations are ejaculated. But what is it he seeks of the Omnipotent? Perhaps the sins of his people have shocked his pious heart, and he prays him to turn them from their evil ways into the path of righteousness and peace. Possibly their ancient hunting grounds have been ruthlessly invaded by an overwhelming number of some hereditary enemy, and his kinded driven from the haunts of their dearest recollections, are now as strangers and sojourners in an unknown land, and he is imploring the divine power to restore them to their primitive domain; or his wife and children, struck with sore disease, languish in anxiety and pain, and he beseeches that they may be purged of the poisonous affliction, and again make glad his lodge fires. Ah, no! none of these things or others analogous to them have urged him to this voluntary sacrifice of food, sleep and drink, to appease the wrath of the Great Supreme. It is that he may be empowered with vigor and valor above his fellows, and with "a strong heart" to strike unmoved the cowering forms of vanquished men and helpless innocents, and gather bouquets of gory scalps to grace his triumphal entry into the village—to be hailed as the Great War Chief, and looked up to with mingled sentiments of admiration and terror.

Pictures such as these might be multiplied in indefinite numbers, but unless they were freely interspersed with such as exhibit many redeeming traits, and many

examples of great and magnanimous impulses, too frequently alas! perverted by superstition or prejudice, they would present a very inadequate, imperfect and unjust summary of the Indian character. They are here introduced to show how easily the casual observer may be deceived; how necessary it is to look upon this people from many points of view, and when engaged in a variety of avocations, ere we jump to conclusions, and undertake to speculate upon the mysteries of their life and being; and because the predominating fault hitherto, has been to exaggerate their virtues, and their intellectual gifts, and to throw far into the shade the dark back ground of their ignorance, their vices, and their crimes. There seems to have been a sort of national pride excited, to invest these primitive children of the soil with all the wonderful powers attributed by the vanity of other nations to their remote ancestry; and to fancy a thousand romantic adventures, and picturesque scenes, and marvellous exertions of skill and intellect, as having accompanied their sojourn in ages past, and as yet daily exhibited in their wars and amusement; as if the fact of our having robbed them of their natural rights could be softened and compensated by this free offering of admiration and respect, or that the fact of our having become their successors under such circumstances, entitled us to presume that the voice of history would be mute in future ages, and the world take it for granted that we were lineally descended from a race endowed with such high and brilliant capabilities. That at some former period the Indians of the United States, in many localities may have considerably advanced in arts and in arms, and may have enjoyed the blessings of some form of civilization peculiar to the positions in which they were placed, and the principles and passions engendered by a state of circumstances altogether beyond our comprehension, is more than probable; and indeed, the ruins of ancient works to be seen in many portions of the Union, strongly attest the fact, and justify the spirit of conjecture in its anxious efforts to solve the enigma. But that at any period within the range of history and observation, they have been found in a condition to justify us in denominating any portion of them a civilized, and not a savage people, in a situation where reason and judgment held the helm in their public affairs, and generous impulses were elevated into sentiments, and brutal appetites and instincts, curbed or repressed by a sense of duty, or the restraints of principles, we may safely and unhesitatingly deny. And truth, also, requires us to add that they are, on the contrary, and have been since our knowledge of them, steeped in a barbarism which, if not as degrading and revolting to the beholder as may be found in many other parts of the world, is as fixed, as obdurate, and as difficult of conquest as any form of it with which we are acquainted; and he who contributes in any manner towards a false estimate of their situation, whether it be done in a romance professedly portraying their manners and habits, in a hasty pamphlet struck off for the gratification of vanity, or in any of the thousand methods of perverting fact, is not only doing deep injustice to them by occasioning inappropriate legislation, and misdirected efforts of philanthropy, but it is throwing a mul-

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titude of impediments in the way of those wise, and calm, and learned efforts, yet continuing to be made in the elucidation of their history, their traditions, their origin, progress, condition, and final destiny. Considerations such as these should impress us deeply with a sense of the responsibility we assumed, in thoughtlessly or imprudently touching subjects which so intimately concern the lasting welfare of many thousands of suffering fellow-creatures, and with a solemn estimate of the innumerable evils which may be generated from a single seed of error carelessly thrown upon the public mind, to be nursed into life by many cultivators, increasing in compound ratios through every revolving season. Nor is there any satisfactory apology to be made by these parties, other than that already alluded to; for if fiction is the object aimed at, the writers may find among the Indians themselves, an ample fund of traditions, strange adventures, and picturesque exhibitions, far surpassing all that they can hope to attain to by the utmost efforts of fancy; and if other motives govern the parties, in the name of reason and common sense, let them give us something like the worth of our money in descriptions of actual novelties and peculiarities, instead of saddling us with a burthen of crude fancies, barren and brainless speculations, and unseminarred creations of dullness and ignorance, sufficient to break the back of a dromedary.

These remarks must be strictly limited to the parties against whom they are directed, for far be it from us to underrate the many able and valuable publications which have appeared on this subject from the pens of pious and zealous missionaries, intelligent travelers in the Indian country, and learned and philosophic scholars. We give to them all honor, and we are anxious to stimulate them to farther efforts by every encouragement in our power to bestow. But unfortunately, the great mass of the public take their impressions from other sources, and in foreign countries, even those whose talents and position place them in the van of the great movement of modern civilization, have too often suffered themselves to rely upon the very authorities against which we are protesting; and hence the propriety, and even the necessity of the observations we have made.

The characteristics of all savage tribes, their intellectual powers, their moral impressions, their religious opinions, all their daily habits of life, their manners, their dress, their domestic implements, their arms, their methods of hunting, and stratagems in war, have their types in the nature with which they are surrounded, or are immediately derived to them from the inductions and analogies which may be made from its surface; and if we only knew intimately, what that nature is in a specified district, there would be little difficulty in arriving at all the inferences necessary to be made, to explain and illustrate their condition, provided the facts respecting that condition were previously thoroughly understood, and emigration or conquest had not intervened. It is our ignorance of the localities in which they are found, and of the real facts respecting savage characteristics, which constitute the whole difficulty. As to their governments, when any are found to exist, we are not inclined to attribute their origin to the same causes. Our impression is,

that they originate in necessity, and imply an exercise of the rational faculty, and more or less of conventional arrangement. But we think we can find enough in what is already collected and classified in reference to savage people, to justify the induction now made, and if space permitted, we could easily illustrate the idea by a multitude of examples. A few are here added to render the idea clear and distinct, and to point out the tendency of it in tracing the subject through all its details.

In the temperate zone, especially its southern border, the reason and the higher faculties, such as taste, imagination, and the sense of the beautiful have ever been found to be most early developed. In Greece, especially, they were carried to the highest point of cultivation; and here, accordingly, we find all that is grand and magnificent in natural forms, relieved and adorned by every phasis and color of the beautiful. We are not justified in asserting that these great faculties are not common to the inhabitants of the north, but we are, in concluding that the rude, waste, and barren objects, and the terrible operations of the elements prevented their development in an early stage of society, and suggested on their surfaces, to uneducated people, images of power and of terror which it required ages to obliterate by deeper study of Nature, and by introducing the vivid light of southern climes to illuminate the dark scenery of the north. Where do we find examples of moral rectitude? In the north, if not prevented by sanguinary superstitions, because here the passions are not deeply excited; in the temperate regions, if the locality be healthful and the soil moderately good; and more especially if the natural propensities are elevated and chastened by a pure taste, founded on natural models of the beautiful. Where do we look for striking instances of moral depravity? In the interior of Africa, where a rich soil and a burning sun forces into life a boundless profusion of vegetation, and stimulates into vitality appetites and passions generative of every variety of disease and vicious inclination. In the north the forms of superior beings assume all the attributes of power and terror; in the temperate regions they are chastened into grace and beauty; and in the torrid zone they become loathsome and horrid personifications of disease and of the physical evils incident to the climate. The Esquemaux feeds upon the Walrus, the Whale, and the Seal, for no vegetation springs into being to furnish forth his meal. The Indian of the western prairie principally subsists upon the Buffalo, and when hemmed in by more powerful tribes turns to the soil for grain and pulse; whilst the Arab of the desert puts up with the milk of his Camels. Their other habitudes may all be traced in the same way.

In the territories of the United States we have no examples of the most depraved and immoral conditions of savage existence, but all the successive stages of intellectual advancement, from the wretched digger who lives in holes and caves and subsists upon things which may be acquired without any other assistance than his limbs; to the Cherokee who is rapidly transforming into the entirely civilized and christian state. When left altogether to themselves, it is extremely

difficult to follow them through the slow and tortuous course; but if assisted by the guarded intercourse, the example, and the science of other more fortunate people, their progress is clear, and greatly accelerated. As education and the arts advance, ideas are multiplied, language enriched with new terms, knowledge of Nature extended into relations beneath the surface, and intellectual pursuits originated, until the new and multiplied combinations modify or efface the barbarous characteristics, and if followed by emigration or conquest, nearly all that once distinguished them is obliterated. And at that stage of their progress when a clear conception of moral relations and duties are introduced, and they begin to act from a sense of duty and conscientious conviction of obligation, we may (and not until then) fairly recognize them as a civilized people. The dominion of Reason and the higher faculties is then fully established over the errors, the blindness, the superstition and the vindictive passions of barbarous life. Civilization itself may be justly defined as a conquest of the understanding and the moral sense over the passions and the appetites, and it exists in as many degrees as mark the other state. A clear conception of moral duties denotes its commencement, and the practice of them its progress; whilst in savage nations the first dawn of this conception indicate the starting point and full knowledge of them—the period of their transition.

Such reflections as these might be amplified and run into many details, but we are not writing an essay. Our only purpose is to awaken in the mind of the reader a proper train of thought, and to suggest such channels as we think it would be profitable they should be directed into, in order to enable him to appreciate whatever is of value respecting the Indian tribes, and to prevent his suffering himself to be misled by fanciful speculations and crude conjectures.

ART. V.—PERRY'S LEAD MINES.

Desiring to collect reliable information in regard to the quantity of Lead and other metals produced in Missouri, we addressed a number of gentlemen who are engaged in mining, requesting them to favor us with a statement of the annual products of their respective establishments; and also to give us a particular description of their ore and of other minerals in their immediate vicinity; with such other facts in relation to the economy of mining and the mineral resources of the State, as they might deem useful or interesting to the country.

In answer to these inquiries we have received from John Perry, Esq., one of the most extensive operators in the State, the following communication in relation to the product of his mines, in the counties

of St. Francis and Washington; and we are also under further obligations to him for the very interesting description of his lead mine in St. Francis, furnished at his request by Mr. JOSHUA COATSWORTH, a practical miner of that establishment. We are also indebted to the politeness of Mr. Perry for a number of interesting specimens from his mines, some of which we shall endeavor to describe in a subsequent number of the Journal.

We trust that stimulated by Mr. Perry's example, other gentlemen will in due time furnish us with similar information, and that they will give us a statement of the number of hands employed at the different mining establishments, and also the number of furnaces, as well as the quantity of metal produced.

PERRY'S MINES, St. Francis County, Mo., September 30th, 1848.

Messrs. TARVER & RISK:

Gentlemen—I herewith enclose you a partial description of my mines in this county, written out by Mr. JOSEPH COATSWORTH, a practical miner who has been digging on my land for several years, and is well versed on the subject of minerals, mines and mining. The ore raised on my mines in this county yields (taking the average of the year round,) about 73 per cent., that is 73 lbs. lead for each 100 lbs. mineral cleared and prepared for smelting. These mines produce from 1,250,000 to 1,500,000 pounds of ore annually; the ore of best quality taken from the large and most productive caves will yield from 76 to 80 per cent. on the first process, but as a good deal of the ore obtained in the course of a year is from weak leads and dry bone caves, which has to be prepared by burning, pounding and sieving, this description of ore will not yield more than 65 to 66 per cent.—so that taking the year round I find the product to be about 73 per cent. on the whole mineral, in lead. In years past this mine has yielded as much as 2,500,000 lbs. of ore annually, but there were a greater number of hands engaged at that time by one-half than what there are now. I have brought a box of specimens from the mines with me, which you can have by sending to my house on Locust, between Sixth and Seventh streets. The foregoing description relates exclusively to my mines in this county; in Washington county, where the largest portion of my mineral lands lay, the description would in many respects be different—the ore there having in general been obtained much shallower, rarely ever found at a greater depth than from 25 to 35 feet, and not often found under the rock, owing I presume to the fact that few miners in these mines are willing to risk the expense of sinking shafts to the proper depth through the rock to get regular leads, their chief object being to get the gravel and float mineral which lie above the rock in the clay, and is generally embedded in white and glass tiff or spar; the latter being

transparent and always breaking in diamonds or tubes—the former is found in large bodies and is an article much used in the manufacturing of white lead, the substance is almost as heavy as the lead, and may be as good for aught I know as the pure white lead; if it be used as a deception it cannot be detected until after the painter has laid it on, so near does it approach to the pure lead when skilfully prepared. There is a manufactory in Jefferson county, on Big River, adjoining Washington county, in successful operation, preparing the tiff or spar for use. Some is hauled directly to St. Louis in its natural state.

The mineral in Washington county, where it is obtained in large quantities, will yield about the same per centage as the mineral does that is procured in this vicinity. The lead is the purest and softest made in the United States, and I have no hesitation in saying that for white lead and glass manufactories, it is surpassed by none. Respectfully, your ob'dt serv't,

JOHN PERRY.

PERRY'S MINES, St. Francis County, Mo., September 28th, 1848.

MESSRS. TARVER & RISK:

Gentlemen—JOHN PERRY, Esq., has handed to me a note addressed to him by you, in which information is solicited relative to the mines on his land, &c. So far as your queries relate to these mines, I shall endeavor to give you all the information in my power: not having any personal acquaintance with his mines in Washington county, I did not wish to say any thing from mere report. I have the same observation to make with respect to Mine "La Motte," and the Iron Mountain.

1st. You ask, what is the nature of the tift or gangue of the leads?

A combination of blende, iron ore, sulphur, lime, and occasionally mendac and sulphur of zinc.

2d. What is the nature of the rocks?—do they exist as incrustations, or do they combine with the ore?

Silecious and calcareous limestone in alternate crusts. Though the rocks may form various receptacles for the deposit of mineral matter, they do not combine with the ore. Although the deepest shaft is not over 175 feet deep, the formation has been penetrated to the depth of 255 feet, and is arranged in clear and well defined strata, varying from three to seven feet in thickness, of the silecious class, with thin alternate crusts of calcareous limestone, making their appearance as we descend, at rather irregular distances of five, ten or fifteen feet apart.

These strata of calcareous rocks seldom exceed two feet in thickness, and the one overlaying the caves, is of a remarkably fine grain and texture, and has frequently a black, smoky appearance in the joints or natural fractures, which intersect the crust.

Specimen No. 1, is an example of the kind.

The shafts are from 80 to 175 feet deep. This difference in depth results from the elevation or depression of the point selected to operate upon. For the caves appear to be on one uniform level, and are filled with the rider or gangue of the leads, consisting of slate, ochre and tumbling rock, in the space not occupied by the ore. The ore is found in horizontal and arched sheets, and in tabulary masses, in a menstruum of a soapy consistence, technically termed "tallow slate," of nearly every imaginable shade and color. The white tallow slate is usually esteemed the menstruum which affords best promise of productiveness. Though we have a criterion in quality, we have no uniform rule as to color. In one location, white slate may be the best medium; another, and neighboring strip of productive caves may furnish an equally nutritive menstruum in pink, red, or yellow slate. Different localities appear to be capricious in their choice of color, and in some measure the quality, of this menstruum.

However this may be, this substance certainly forms one of the most wonderful productions of nature. It often so nearly resembles the animal substance, as to be mistaken for it by strangers at the mines; but here the resemblance ends.

It is of an alkaline quality, and undoubtedly the menstruum of the ore, from the fact, that we frequently find radiated, vertical, and horizontal spears, isicles, or crystals of the carbonate of lead, and of the sulphate of lead, shooting through the slate, resting immediately upon the sheeted and tabular masses of the leads. We are not aware that any chemical analysis has been had, accounting, satisfactorily, for the difference of the coloring, or the basis of the substance, and think an analysis would afford some interesting chemical phenomena, and valuable facts for the mineralogist.

We shall forward you some specimens of the different kinds, and would suggest that such an analysis might prove not only important in a scientific point of view, but of public utility. The specimens we send may be dry when they arrive, but immerse them in water and you will readily perceive their quality. We send, also, specimens of the rock overlaying the caves. The flowers, you will perceive, on the superfices of the fractures, in their original position, appear almost uniformly inverted. Had they pointed upwards, like the flowers produced by caloric on window glass in frosty weather, we might have supposed their origin from gaseous processes going on in the caves, but from their inversion it would appear that the exhalations are attracted in the direction of the caves, and that the caves become organs of ventilation, respiration and absorption to the superincumbent and surrounding *formation*, as well as points of attraction and deposit; that the process of crystalization of the minerals deposited in them, is carried on by the joint attractions of liquid mineral deposits, absorbed perspirable mineral matter, and gaseous inhalations from the surrounding formation downwards and siderally, currents tending to the caves; and we think that portions of the white slate, lying contiguous or next the lead ore, will bear some affinity to the carbonate

of lead, or contain at least a component part of its basis. Applied to fruit trees, it is one of the best stimulents we are acquainted with; it effaces grease spots effectually from buckskin, and is consequently in request by the miner, both at his toilet, and as a good sign, or the menstruum of his leads.

Lead ores are the only ores found in sufficiently large quantities to merit attention. Zinc, cobalt, mundac, carbonate and red oxyde of lead certainly exist, and the presence of copper is slightly indicated in small hand specimens, picked from the rider or gangue of the leads. The native carbonate of lead is usually found in small masses, or attached as a coat or covering to the sheeted or tabular masses of galena, in caves remarkable for their productiveness. The red oxyde, or "red paint," is frequently though not always found, in thin horizontal strips upon the gangue or rider of the leads, as we approach our strips of productive caves; and if, on leaving a rich neighborhood, it makes its appearance, it is ever hailed as the harbinger of barrenness. Thus, it often forms a line of boundary around our good and prolific patches.

There are two classes of the lead ore. The broad cubical grained galena ore, and a grade of the argentiferous ore, or what we denominate steel ore, from its granular structure. An opinion has been advanced, that the last may produce from four to eight ounces of silver to the ton of lead, smelted from ores of this class *only*. But this is merely speculation, based upon the granular structure of the ore. If any one would take sufficient interest in the subject to procure an assay, it would be well to remark how far these opinions are correct. You enquire the influence which other metalic compounds, mineralized with our ore, has upon the process of smelting. The galena, it is almost needless to say, is mineralized with silex, sulphur, iron and arsenic, and leaves, at the close of the first process, a residuum we term "slag." This, carried through another process at the "Scotch Slag Hearth," leaves again a vitrified substance not yet ascertained, &c.

Though not requested, an inquiry may be made as to the shape of the caves. They are various—cylindrical, oblong, eliptical. Occasionally a cavity will perforate the overlaying strata. These we denominate chimneys, and when they are bearing chimneys, are always esteemed a windfall—"a consummation always hoped for." They frequently penetrate the overlaying strata ten, twelve to eighteen feet, and connect with an upper set of caves. The first penetrated in the discoveries of these mines, (but which have been little worked in consequence of the subsequent discovery of the caves,) was eighteen feet deeper.

The form of the caves is most commonly an elipsis, the plane being parallel with the plane of the horizon—sometimes not over fifteen inches in width—when they may gradually expand to ten or twelve feet in width, and then contract again to three or four feet. Places occur where these wide spaces are low and flat, and again, when the caves may attain an altitude of ten to twenty feet.

Some have been ascertained to rise perpendicularly, others spirally to the surface. In nearly every instance the incrustations immediately over these places

appear broken, with open or easy fractures, hence such points are usually selected to sink upon, for the better ventilation of the mines, convenience, &c.

It appears to be the opinion of some miners that the incrustations dip or incline to the west. But this opinion, if founded upon observation, must have been limited to particular points, for there is not any uniform dip so far as the majority of miners have noticed. But basins and caps may occur in the neighborhood of each other, inclining slightly or dipping abruptly in abrupt slips to nearly every point of the compass. It would appear that the horizontal superfices of the crusts are of an undulating wave-like character, consequently we may thus account for the lurches up and down which the caves frequently make to nearly every imaginable point, and from the further fact that the shafts on the opposite sides of the hill on which the mines are situated, go to a depth which approximates so nearly to dead level, that we are compelled to assume that with our present knowledge, so far as the strata are concerned, there is not any perceptible dip or inclination. It would further appear to be the opinion of some miners that the richness of these mines and that of the Messrs. VALLE adjoining, is the result of the intersection of two or more productive strips of bearing caves, the strips of uncertain width all concentrating at that point.

These strips of fruitful ground appear as they leave or diverge from this point, less productive, so far as they have been proved; and the intervening strips of barrens wider in proportion to the distance from this basin or deposit thus indicated, where the richest leads have been found.

It is further noticed that the caves rise concavely on all sides from this deposit. The caves on one side of the ridge may, notwithstanding their serpentine windings, have a general bearing south-east to north-west, while on another strip of large bearing caves the course of the principal leads is east and west; and again on the opposite side of the hill the large bearing caves have a course nearly north and south. In one place in these mines the general course of the best leads appears to correspond with the bearing of the main dividing ridge (intersecting part of this county) for a distance of nearly two hundred yards, when they appear to be intersected from another spur, by large caves of a different bearing, diverging at this point to east, west, north and south.

If we have not satisfied you, come and see for yourselves—we will use you well. In the meantime permit me to assure you of our personal good will for your undertaking, and subscribe ourselves in the name of our miners,

Yours truly, ST. FRANCIS.

ART. VI.—EDUCATION.

BY JOHN H. TICE,

President of the St. Louis Board of Directors of Public Schools.

HEREAFTER the philosophic historian will designate the American Revolution as a new era in the history of mankind, and the starting point of the new, and higher institutions that are now spreading over the world. To be sure the Revolution did not originate those mighty principles, that are now shaking and crumbling the thrones of the old world; for their seeds were sown when humanity was created, and the long interval that had elapsed had given them time to germinate and grow. That event, however, first gave them predominance and subjected an empire to their sway. But human nature remains the same since as prior to that event. It has not changed in its original constitution, but it has put forth new branches, indicating a larger growth and expansion, from which a new series of developments in human character and conduct must follow. In other words, the people of the American confederacy passed from being ruled by others, to self-government. Hereditary misrule was abolished, and an effort made to enthrone justice, truth, benevolence and reverence in the hearts of the people, and give them authoritative sway over human conduct. This then was the idea of the Revolutionary fathers, and is the idea and mission of American institutions. How shall this idea be realized, and by what means shall this mission be accomplished, are the problems that demand a solution.

Unquestionably to realize any idea, there must be a proper training and education of the people in reference to its realization. Give me the idea a people set out with, and I will mark out the course it must pursue to develop it. Or give me the idea, and the course that a people is pursuing, and I will predict the success or failure it will meet in the realization of the idea it started with. If then the idea of the American people is the supremacy of truth, justice, benevolence and reverence, and that self-government consists in conforming social and individual action to them, then must we train our people with reference to the development and realization of this idea, or the experiment of self-government must fail, and the end be, that we have only passed from one kind of misrule, to be the subjects and slaves of another. A dynasty can be changed in a day, but a revolution that not only changes the surface of society, but its internal organization by operating among the primordeal elements of human character, is the work

of time. The oak is the result of the expansion of the principles once unfolded in the acorn. But for their expansion, for centuries a succession of influences—light, heat and moisture—conducive to their growth have been in operation. So it is with society. Its existence presupposes a purpose. This purpose constitutes its destiny, and this destiny it must achieve. What purpose then was the creation of humanity to subserve? Ascertain that purpose, and you will have ascertained the destiny of humanity—you will know what influences must be put in operation to achieve it. But whether you aid, or not, ultimately that destiny will be achieved. The great law of humanity is constantly tending to its achievement, in spite of all that men through ignorance, interest, or perverseness may do to retard or oppose it. Man cannot change any of the laws of nature; what they originally were, they must always remain, and in the end they will accomplish their purpose. In physics this has long been acknowledged, but in ethics, men have disputed it. In physics no Xerxes any longer attempts to chain the sea, or a Canute to command the ocean to roll back its waves. But in ethics we have those who have devised a thousand and one contrivances to fashion and mould society to suit their own interests or caprices. Foolish and futile attempt. In humanity nothing can be imposed from without, but all must be developed from within. The word "educate" presupposes this: from the Latin *e* out, and *duco* to lead, or bring. To educate then, means to bring out, or develop internal principles. To educate successfully then, we must clearly understand the internal principles of the mind, the laws of their development, and their result when embodied in perfect institutions. Having ascertained this, we must shape our system of education to effect it, and as we then will be in harmony, and coöperate with the supreme law of humanity, we cannot fail, for Heaven with its omnipotence stands pledged to give us success. The highest point of human ken, and the noblest conception of human intellect as the ultimate destiny of man, is the complete fraternization, or establishment of the true brotherhood of humanity. This we call as we did above, the reign of the principles of truth, justice, benevolence and reverence, and their authoritative sway over human conduct. If such be our conceptions of human destiny, we necessarily will educate our children with reference to realize it: and the development of the principles above indicated, will have a prominent place in our system of education.

Physical education must not be neglected, nor that which will develop the physical resources of nature. A healthy and vigorous body, and a knowledge of the laws of the Universe above, around, beneath

and within us, are as essential, as a knowledge of the laws of the moral nature of our species. Yea, are of primary importance. History, perhaps, teaches nothing clearer, than that the moral culture of a people depends much upon the development of the physical resources, and to the circumstances with which it is surrounded. But be this as it may, nothing is more certain, than that whatever conception a people may have of its own mission, or of the duty and purposes of humanity, it always will educate its children in reference to performing, or answering it.

Among the ancients, war was considered the first duty and greatest glory of man. But war as then carried on, was mainly decided by muscular strength and agility. Javelins were to be hurled and falchions and slings wielded; but the distance and accuracy with which one could be hurled, and the vigor and dexterity with which the others could be wielded, depended upon the muscular developments of the human frame and the training and practice each soldier had. Of so much importance was a training of youth to serve the purposes of war considered, that some writers state that in the Balearic Isles, mothers were in the habit of suspending the breakfast of their children on the loftiest boughs of trees from whence the children had to bring it with their slings, or go without it. Whenever we look into ancient history we find that the invigoration of the frame, and the growth and strengthening of the limbs, constituted the chief object of national policy. Emulous and ambitious youths regarded bodily strength, agility, hardihood and the power of physical endurance as the subjects of the loftiest aspirations, and their possession as the pinnacle of greatness. These then were the accomplishments sought by barbarian youths; and they were indispensable in the then rude state of society. Man was then little else than a ferocious animal, preying upon his fellows. Brute force decided everything, and the strength of an ox was of more value, and secured more consideration to its possessor, than mental vigor, or the noble qualities of the souls. The body then was everything, the mind, nothing; consequently the one was cultivated and exercised in every possible way to invigorate, strengthen and harden it. But the mind or soul was too insignificant to attract attention, much less to raise the question of its cultivation. Power then was the exertion of physical force, and physical force was in proportion to the strength of the body. No one dreamed that by cultivating the mind, the secrets of nature itself would be revealed, and all her hidden stores of power exposed—that by this means there would be an accretion of power to man, far surpassing the accumulated strength of the

whole human race, could all its vigor be concentrated in a single arm. That by using the agencies of nature, which needed but the application of certain chemical and mechanical conditions, man should be invested with a power, such as no Grecian or Roman conqueror, with the myriads of human beings he led forth to battle, ever wielded or possessed. Gunpowder, steam, electricity and magnetism, have all revealed their wonders to the enquiring mind, and under its guidance applied their superhuman powers to transform and ameliorate the condition of man. While bodily strength was cultivated, the earth was the theatre for its action, and it filled it with blood and woe, and sowed it with tears. Since intellectual strength is gaining an ascendancy, light, and joy, and truth are extinguishing wrath, and hate, and lust, and selfishness, and transforming earth into an Eden.

The political or social, physical and moral conditions of mankind have all felt the ameliorating influence of mental cultivation. Improvements in either, have acted and re-acted upon each other, so that all have advanced and kept pace together. The arts of peace and civilization have occupied men's minds. Instead of plundering each other, men have seized upon the great treasure-house of nature, and have appropriated to themselves, from that exhaustless source, greater riches than Midas coveted, or Crœsus possessed. Some have delved into the bowels of the earth and have brought up thence the wealth laid up of old in subterranean chambers, even now of unknown extent and richness. Others, by the facilities and security afforded, have caused the earth to yield abundant and unwonted harvests. Some again have ploughed every ocean that spans the globe, visited every country, and searched out every port on its circumference, and brought "home for sustenance or superfluity" the natural and artificial productions of every people and every zone. Some applied themselves to the construction of labor-saving machinery, which have produced cheap manufactures of endless variety, prodigality and richness. And others again have seized upon the unchained and untangible elements, and pressed them into service so as to convey intelligence from the remotest parts of the globe with the swiftness of light, and almost endowing man with ubiquity. These are some of the stores of wealth and power, which the ancients left intact, because they neglected the cultivation of that part of man, which alone could enable them to avail themselves of them

A change in the training of men, has wrought, as it were, a change in their destiny and nature. One training transformed them almost into demons, while another is now almost making them gods. To give

an impulse to this higher destiny, and to develop this new awakened nature, is the purpose of education. Whatever inventions, improvements, or progress, the present or past generations have made, were the result of their mental culture, and that they have not accomplished more, is owing that to accomplish more, a greater amount of knowledge, and a more thorough insight into the laws of nature were necessary, than they possessed or we possess. If the work of improvement is not to stop with us, but is to be carried forward by our children then we must give them greater facilities, and a superior education than we had. Such seems to be the convictions of the American people. They all seem to have an impression that intelligence will promote the happiness of their children, and that better faculties and a greater share of education ought to be furnished to the coming generation than the present enjoyed. Hence every State in the Union has made some provision for the support of schools, though few have adopted any system, and fewer have carried out what they have adopted. Wherever a system has been adopted, it was the result of the efforts of a few philanthropic minds, and if the beneficent effects contemplated by the benevolent projectors and framers of these systems have not followed, it is owing to the crude state in which they have been brought forward, or the little general interest taken in them by the community. I shall therefore resume the consideration of the various provisions made by the several States and their systems of edution, which being understood and appreciated by the reader, I shall give a *projet* for the organization and support of Common Schools in Missouri.

ART. VII.—BASIN OF THE GREAT SALT LAKE.

THERE is perhaps no part of the globe which is situated in a climate suited to the habitation of civilized man, that has so long remained unexplored, as the Great Basin in Upper California. And although embracing an area equal to about four of our largest States, we are indebted to Col. FREMONT for nearly every reliable fact that has been published in regard to it. The place which it occupies on the map has usually been indicated by the words "the great desert," and we have always regarded it as the most formidable obstacle to the intercourse between the States and the Pacific Ocean in that direction. But so far from this being the case, it now appears that the passage

through the Great Basin is likely to be the most agreeable portion of the route; and that, although its general character is that of sterility, yet there is a considerable quantity of fertile soil with a climate in some parts as agreeable, perhaps, as any on the continent. Since the publication of Col. Fremont's account of his visit to the Salt Lake in 1843, we have often thought of this Great Basin as the last place on the continent that would attract the emigrant. But scarcely one short year had elapsed after the publication of Col. Fremont's expedition, before we heard of the movement of a colony of Mormons to the Great Salt Lake. And on the first of April, 1848, Col. Fremont says: "They had 3,000 acres in wheat, seven saw and grist mills, 700 houses in a fortified enclosure of sixty acres, stock, and other accompaniments of a flourishing settlement." And if these people should carry out their plan of settlement as promulgated by their principal men in the beginning of the present year, we may expect to see a population in the Great Basin sufficient to form a State, in ten years, perhaps, from the present time. And should it be found practicable to locate the "Pacific Railroad" across the Great Basin, it will require but little more time to travel from St. Louis to the Salt Lake, than it now requires to go to Cincinnati; and our market will be supplied with the fine salmon trout of that region with as much facility as it is now supplied with fish from Lake Michigan. And instead of fishing in the muddy ponds in the vicinity of St. Louis, at the risk of catching the ague, parties will repair to the Great Basin to angle for the salmon trout in the pure snow water that flows from the Sierra Nevada.

The following description of the Sierra Nevada, and the Great Basin, is taken from Col. Fremont's Geographical Memoir upon Upper California, published by order of the Senate of the United States, under a resolution of the 5th of June, 1848:

SIERRA NEVADA.

This Sierra is part of the great mountain range, which, under different names and with different elevations, but with much uniformity of direction and general proximity to the coast, extends from the peninsula of California to Russian America, and without a gap in the distance through which the water of the Rocky Mountains could reach the Pacific Ocean, except at the two places where Columbia and Frazer's river respectively find their passage. This great range is remarkable for its length, its proximity and parallelism to the sea coast, its great elevation, often more lofty than the Rocky Mountains, and its many grand volcanic peaks, reaching high into the region of perpetual snow. Rising singly,

like pyramids from heavily timbered plateaux, to the height of fourteen and seventeen thousand feet above the sea, these snowy peaks constitute the characterizing feature of the range, and distinguish it from the Rocky Mountains and all others on our part of the continent.

That part of this range which traverses the ALTA CALIFORNIA is called the *Sierra Nevada*, (Snowy Mountain,) a name in itself implying a great elevation, as it is only applied, in Spanish geography, to the mountains whose summits penetrate the region of perpetual snow. It is a grand feature of California, and a dominating one, and must be well understood before the structure of the country and the character of its different divisions can be comprehended. It divides California into two parts, and exercises a decided influence on the climate, soil, and productions of each. Stretching along the coast, and at the general distance of 150 miles from it, this great mountain wall receives the warm winds, charged with vapor, which sweep across the Pacific Ocean, precipitates their accumulated moisture in fertilizing rains and snows upon its western flank, and leaves cold and dry winds to pass on to the east. Hence the characteristic differences of the two regions—mildness, fertility, and a superb vegetable kingdom on one side, comparative barrenness and cold on the other.

The two sides of the Sierra exhibit two distinct climates. The state of vegetation, in connection with some thermometrical observations made during the recent exploring expedition to California, will establish and illustrate this difference. In the beginning of December, 1845, we crossed this Sierra, at latitude 39 deg., 17 min., 12 sec., at the present usual emigrant pass, at the head of the Salmon Trout river, forty miles north of New Helvetia, and made observations at each base, and in the same latitude, to determine the respective temperatures; the two bases being, respectively, the *western* about 500, and the *eastern* about 4,000 feet above the level of the sea; and the Pass, 7,200 feet. The mean results of the observations were, on the *eastern* side, at sunrise, 9 deg.; at noon, 44 deg.; at sunset, 30 deg.; the state of vegetation and the appearance of the country being at the same time, (second week of December,) that of confirmed winter; the rivers frozen over, snow on the ridges, annual plants dead, grass dry, and deciduous trees stripped of their foliage. At the *western* base, the mean temperature during a corresponding week was, at sunrise, 29 deg., and at sunset, 52 deg.; the state of the atmosphere and of vegetation that of advancing spring; grass fresh and green, four to eight inches high, vernal plants in bloom, the air soft, and all the streams free from ice. Thus December on one side of the mountain was winter; on the other it was spring.

THE GREAT BASIN.

East of the Sierra Nevada, and between it and the Rocky Mountains, is that anomalous feature in our continent, the Great Basin, the existence of which was advanced as a theory after the second expedition, and is now established as a geographical fact. It is a singular feature: a basin of some five hundred miles

diameter every way, between 4,000 and 5,000 feet above the level of the sea, shut in all round with mountains, with its own system of lakes and rivers, and having no connection whatever with the sea. Partly arid and sparsely inhabited, the general character of the Great Basin is that of a desert, but with great exceptions, there being many parts of it very fit for the residence of a civilized people; and of these parts, the Mormons have lately established themselves in one of the largest and best. Mountain is the predominating structure of the interior of the Basin, with plains between—the mountains wooded and watered, the plains arid and sterile. The interior mountains conform to the law which governs the course of the Rocky Mountains and of the Sierra Nevada, ranging nearly north and south, and present a very uniform character of abruptness, rising suddenly from a narrow base of ten to twenty miles, and attaining an elevation of two to five thousand feet above the level of the country. They are grassy and wooded, showing snow on their summit peaks during the greater part of the year, and affording small streams of water from five to fifty feet wide, which lose themselves, some in lakes, some in the dry plains, and some in the belt of alluvial soil at the base; for these mountains have very uniformly this belt of alluvion, the wash and abrasion of their sides, rich in excellent grass, fertile, and light and loose enough to absorb small streams. Between these mountains are the arid plains which receive and deserve the name of desert. Such is the general structure of the interior of the Great Basin, more Asiatic than American in its character, and much resembling the elevated region between the Caspian Sea and northern Persia. The rim of this Basin is massive ranges of mountains, of which the Sierra Nevada on the west, and the Wah-satch and Timpanogos chains on the east, are the most conspicuous. On the north it is separated from the waters of the Columbia by a branch of the Rocky Mountains, and from the Gulf of California, on the south, by a bed of mountainous ranges, of which the existence has been only recently determined. Snow abounds on them all; on some, in their loftier parts, the whole year, with wood and grass; with copious streams of water, sometimes amounting to considerable rivers, flowing inwards, and forming lakes, or sinking in the sands. Belts or benches of good alluvion are usually found at their base.

Lakes in the Great Basin.—The Great Salt Lake and the Utah Lake are in this Basin, towards its eastern rim, and constitute its most interesting feature—one, a saturated solution of common salt—the other, fresh—the Utah about one hundred feet above the level of the Salt Lake, which is itself four thousand two hundred above the level of the sea, and connected by a strait, or river, thirty-five miles long.

These lakes drain an area of ten or twelve thousand square miles, and have, on the east, along the base of the mountain, the usual bench of alluvion, which extends to a distance of three hundred miles, with wood and water, and abundant grass. The Mormons have established themselves on the strait between these two lakes, and will find sufficient arable land for a large settlement—important

from its position as intermediate between the Mississippi Valley and the Pacific Ocean, and on the line of communication to California and Oregon.

The Utah is about thirty-five miles long, and is remarkable for the numerous and bold streams which it receives, coming down from the mountains on the south east, all fresh water, although a large formation of rock salt, imbedded in red clay is found within the area on the southeast, which it drains. The lake and its affluents afford large trout and other fish in great numbers, which constitute the food of the Utah Indians during the fishing season. The Great Salt Lake has a very irregular outline, greatly extended at time of melting snows. It is about seventy miles in length; both lakes ranging nearly north and south, in conformity to the range of the mountains, and is remarkable for its predominance of salt. The whole lake waters seem thoroughly saturated with it, and every evaporation of the water leaves salt behind. The rocky shores of the Islands are whitened by the spray, which leaves salt on every thing it touches, and a covering like ice forms over the water, which the waves throw upon the rocks. The shores of the lake in the dry season, when the waters recede, and especially on the south side, are whitened with encrustations of fine white salt; the shallow arms of the lake, at the same time, under a slight covering of briny water, present beds of salt for miles, resembling softened ice, into which the horses' feet sink to the fetlock. Plants and bushes, blown by the wind upon these fields, are entirely encrusted with crystalized salt, more than an inch in thickness. Upon this lake of salt the fresh water received, though great in quantity, has no perceptible effect. No fish, or animal life of any kind, is found in it; the *larvæ* on the shore being found to belong to winged insects. A geological examination of the bed and shores of this lake is of the highest interest.

Five gallons of water taken from this lake in the month of September, and roughly evaporated over a fire, gave fourteen pints of salt, a part of which being subjected to analysis, gave the following proportions:

Chloride of sodium, (common salt,)	97.80 parts.
Chloride of calcium,	0.61 "
Chloride of magnesium,	0.24 "
Sulphate of soda,	0.23 "
Sulphate of lime,	1.12 "
	100.00

Southward from the Utah is another lake of which little more is now known than when Humboldt published his general map of Mexico. It is the reservoir of a handsome river, about two hundred miles long, rising in the Wahsatch Mountains, and discharging a considerable volume of water. The river and lake were called by the Spaniards, *Severo*, corrupted by the hunters into *Sevier*. On the map, they are called *Nicollet*, in honor of *J. N. Nicollet*, whose premature death interrupted the publication of the learned work on the physical geography

of the basin of the Upper Mississippi, which five years of labor in the field had prepared him to give.

On the western side of the basin, and immediately within the first range of the Sierra Nevada, is the Pyramid Lake, receiving the water of Salmon Trout river. It is thirty-five miles long, between four and five thousand feet above the sea, surrounded by mountains, is remarkably deep and clear, and abounds with uncommonly large salmon trout. Southward, along the base of the Sierra Nevada, is a range of considerable lakes, formed by many large streams from the Sierra. Lake Walker, the largest among these, affords great numbers of trout, similar to those of the Pyramid Lake, and is a place of resort for Indians in the fishing season.

There are probably other collections of water not yet known. The number of small lakes is very great, many of them more or less salty, and all, like the rivers that feed them, changing their appearance and extent under the influence of the season, rising with the melting of the snows, sinking in the dry weather, and distinctly presenting their high and low water mark. These generally afford some fertile and well watered land, capable of settlement.

Rivers of the Great Basin.—The most considerable river in the interior of the Great Basin is the one called on the map Humboldt river, as the mountains at its head are called Humboldt River Mountains—so called as a small mark of respect to the "Nestor of scientific travelers," who has done so much to illustrate North American geography. without leaving his name upon any one of its remarkable features. It is a river long known to hunters, and sometimes sketched on maps under the name of Mary's, or Ogden's, but now for the first time laid down with any precision. It is a very peculiar stream, and has many characteristics of an Asiatic river—the Jordon, for example, though twice as long—rising in mountains and losing itself in a lake of its own, after a long and solitary course. It rises in two streams in mountains west of the Great Salt Lake, which unite, after some fifty miles, and bears westwardly along the northern side of the basin towards the Great Sierra Nervada, which it is destined never to reach, much less to pass. The mountains in which it rises are round and handsome in their outline, capped with snow the greater part of the year, well clothed with grass and wood, and abundant in water. The stream is a narrow line, without affluents, losing by absorption and evaporation as it goes, and terminating in a marshy lake, with low shores, fringed with bulrushes, and whitened with saline encrustations. It has a moderate current, is from two to six feet deep in the dry season, and probably not fordable any where below the junction of the forks during the time of melting snows, when both lake and river are considerably enlarged. The country through which it passes, (except its immediate valley,) is a dry sandy plain, without grass, wood, or arable soil; from about 4,700 feet, (at the forks,) to 4,200 feet, (at the lake,) above the level of the sea, winding among broken ranges of mountains, and varying from a few miles to twenty in breadth. Its own immediate valley is a rich alluvion, beautifully covered with blue grass, herd grass, clover, and other

nutricious grasses; and its course is marked through the plain by a line of willow and cotton wood trees, serving for fuel. The Indians in the fall set fire to the grass and destroy all trees except in low ground near the water.

The river possesses qualities which, in the progress of events, may give it both value and fame. It lies on the line of travel to California and Oregon, and is the best route now known through the Great Basin, and the one traveled by emigrants. Its direction, nearly east and west, is the right course for that travel. It furnishes a level unobstructed way for nearly three hundred miles, and a continuous supply of the indispensable articles of water, wood, and grass. Its head is towards the Great Salt Lake, and consequently towards the Mormon settlement, which must become a point in the line of emigration to California and the lower Columbia. Its termination is within fifty miles of the base of the Sierra Nevada, and opposite the Salmon Trout river pass—a pass only seven thousand two hundred feet above the level of the sea, and less than half that above the level of the basin, and leading into the valley of the Sacramento, some forty miles north of Nueva Helvetia. These properties give to this river a prospective value in future communications with the Pacific Ocean, and the profile view on the north of the map shows the elevations of the present traveling route, of which it is a part, from the South Pass, in the Rocky Mountains, to the Bay of San Francisco.

The other principal rivers of the Great Basin are found on its circumference, collecting their waters from the Snowy Mountains which surround it, and are, 1. Bear River, on the east, rising in the massive range of the Timpanogos Mountains and falling into the Great Salt Lake, after a doubling course through a fertile and picturesque valley, two hundred miles long. 2. The Utah River and Timpanaozu or Timpanogos, discharging themselves into the Utah Lake on the east, after gathering their copious streams in the adjoining parts of the *Wah-satch* and Timpanogos Mountains. 3. Nicollet River, rising south in the long range of the *Wah-satch* Mountains, and falling into a lake of its own name, after making an arable and grassy valley, two hundred miles in length, through mountainous country. 4. Salmon Trout River, on the west, running down from the Sierra Nevada and falling into Pyramid Lake, after a course of about one hundred miles. From its source, about one-third of its valley is through a pine timbered country, and for the remainder of the way through very rocky, naked ridges. It is remarkable for the abundance and excellence of its salmon trout, and presents some ground for cultivation. 5. Carson and Walker rivers, both handsome clear water streams, nearly one hundred miles long, coming, like the preceding, down the eastern flank of the Sierra Nevada and forming lakes of their own name at its base. They contain salmon trout and other fish, and form some large bottoms of good land. 6. Owen's River, issuing from the Sierra Nevada on the south, is a large bold stream, about one hundred and twenty miles long, gathering its waters in the Sierra Nevado, flowing to the southward, and forming a lake about fifteen miles long, at the base of the mountain. At a medium stage it is generally four or five

feet deep, in places fifteen; wooded with willow and cotton wood, and makes continuous bottoms of fertile land, at intervals rendered marshy by springs and small affluents from the mountain. The water of the lake in which it terminates has an unpleasant smell and bad taste, but around its shores are found small streams of pure water with good grass. On the map this has been called Owen's River.

Besides these principal rivers issuing from the mountains on the circumference of the Great Basin, there are many others, all around, all obeying the general law of losing themselves in sands, or lakes, or belts of alluvion, and almost all of them an index to some arable land with grass and wood.

Interior of the Great Basin.—The interior of the Great Basin, so far as explored, is found to be a succession of sharp mountain ranges and naked plains, such as have been described. These ranges are isolated, presenting summit lines broken into many peaks, of which the highest are between ten and eleven thousand feet above the sea. They are thinly wooded with some varieties of pine, (*pinus monophyllus* characteristic,) cedar, aspen, and a few other trees; and afford an excellent quality of bunch grass, equal to any found in the Rocky Mountains. Black tailed deer and mountain sheep are frequent in these mountains; which, in consideration of their grass, water and wood, and the alluvion at their base, may be called fertile, in the radical sense of the word, as signifying a capacity to produce, or, bear, and in contradistinction to sterility. In this sense these interior mountains may be called fertile. Sterility, on the contrary, is the absolute characteristic of the valleys between the mountains—no wood, no water, no grass; the gloomy artemisia the prevailing shrub—no animals, except the hares, which shelter in these shrubs, and fleet and timid antelope, always on the watch for danger, and finding no place too dry and barren which gives it a wide horzon for its view and a clear field for its flight. No birds are seen in the plains and few on the mountains. But few Indians are found, and those in the lowest state of human existence; living not even in communities, but in the elementary state of families, and sometimes a single individual to himself—except about the lakes stocked with fish, which become the property and resort of a small tribe. The abundance and excellence of the fish, in most of these lakes, is a characteristic; and the fishing season is to the Indians the happy season of the year.

Climate of the Great Basin.—The climate of the Great Basin does not present the rigorous winter due to its elevation and mountainous structure. Observations made during the last expedition, show that around the southern shores of the Salt lake, latitude 40 deg. 30 min., to 41 deg, for two weeks of the month of October, 1845, from the 13th to the 27th, the mean temperature was 40 deg. at sunrise, 70 deg. at noon, and 54 deg. at sunset; ranging at sunrise, from 28 to 57 deg.; at noon, from 62 to 76 deg.; at four in the afternoon, from 58 to 69 deg.; and at sunset, from 47 to 57 degrees.

Until the middle of the month the weather remained fair and very pleasant. On the 15th, it began to rain in occasional showers, which whitened with snow

the tops of the mountains on the southeast side of the lake valley. Flowers were in bloom during all the month. About the 18th, on one of the large islands in the south of the lake, *helianthus*, several species of *aster*, *erodium cicatarium*, and several other plants, were in fresh and full bloom; the grass of the second growth was coming up finely, and vegetation, generally, betokened the lengthened summer of the climate.

The 16th, 17th, and 18th, stormy with rain; heavy at night; peaks of the Bear river range and tops of the mountains covered with snow. On the 18th, cleared with weather like that of late spring, and continued mild and clear until the end of the month, when the fine weather was again interrupted by a day or two of rain. No snow within 2,000 feet above the level of the valley.

Across the interior, between latitudes 41 and 38 deg., during the month of November, (5th to 25th,) the mean temperature was 29 deg. at sunrise, and 40 at sunset; ranging at noon (by detached observations) between 41 and 60 degrees. There was a snow storm between the 4th and 7th, the snow falling principally at night, and sun occasionally breaking out in the day. The lower hills and valleys were covered a few inches deep with snow, which the sun carried off in a few hours after the storm was over.

The weather then continued uninterruptedly open until the close of the year, without rain or snow; and during the remainder of November, generally clear and beautiful; nights and mornings calm, a light breeze during the day, and strong winds of very rare occurrence. Snow remained only on the peaks of the mountains.

On the western side of the basin, along the base of the *Sierra Nevada*, during two weeks, from the 25th *November* to the 11th *December*, the mean temperature at sunrise was 11 degrees, and at sunset 34; ranging at sunrise from zero to 21 deg. and at sunset from 23 to 44 deg. For ten consecutive days of the same period, the mean temperature at noon was 45 deg., ranging from 33 to 56 degrees.

The weather remained open, usually very clear, and the rivers were frozen.

The winter of '43–'44 within the basin, was remarkable for the same open, pleasant weather, rarely interrupted by rain or snow. In fact there is nothing in the climate of this great interior region, elevated as it, and surrounded and traversed by snowy mountains, to prevent civilized man from making it his home, and finding in its arable parts the means of a comfortable subsistence; and this the Mormons will probably soon prove in the parts about the Great Salt Lake. The progress of their settlement is already great. On the 1st of April of the present year, they had 3,000 acres in wheat, seven saw and grist mills, seven hundred houses in a fortified enclosure of sixty acres, stock, and other accompaniments of a flourishing settlement.

Such is the Great Basin, heretofore characterized as a desert, and in some respects meriting that appellation; but already demanding the qualification of great exceptions, and deserving the full examination of a thorough exploration.

ART. VIII.—THE RISE, PROGRESS, AND INFLUENCE OF THE FINE ARTS.

BY ALFRED S. WAUGH, ESQ.

SCULPTURE.

As it is not our province in these papers to go into academic details, nor elaborate the theories of art as taught by the schools, we cannot trace them with that minutæ, which would be required were we addressing a class of students, but simply content ourselves with a cursory glance at their rise, progress, and influence, and leave the reader to examine for himself, or not, at his own pleasure. If in these short and hastily written sketches, the writer has had the good fortune to have been the means of creating the slightest consideration, he shall esteem himself amply compensated for the task he has undertaken, and think he has done some good service to his fellow-citizens.

In that volume to which the civilized world looks for history, laws and instruction both civil and divine, we have the earliest accounts of works of sculpture. That this art was practised at a very early period there can be no doubt, for we find that when God commanded Jacob to return to the land of Canaan, his wife Rachel carried away the idols of her father Laban. And when Moses was on the Mount receiving the tablets of stone from the hand of the Almighty, Aaron and the Israelites, made and worshipped a golden calf. "This violent tendency to idolatry," says Flaxman, "accounts for the strict injunctions, under which they were bound, by divine command, not to worship any image: whilst the same authority commanded statues of cherubim to extend their wings over the ark of the covenant, and that the veil of the tabernacle should be adorned with cherubim. This proves the command was not against images themselves, but the abuse of them to impious and idolatrous purposes, and, on the contrary, is a testimony of approbation of such works, when representing the ministers of God's Providence, or the guardians of his holy laws; and indeed it is a most gratifying reflection to a practitioner of the sister arts, that the Almighty condescends to employ them as the handmaids of religion, and that he particularly inspired Aholiab and Bezaliel to produce the most admirable and lively decorations of angelic forms for his tabernacle. Of these nothing remains but description; all the glories of Solomon's Temple, and that raised after the captivity, with all their beauty and splendor, are swept away by the same appointment which decreed the Jews should no longer be a nation. Were we to search with the most scrutinizing diligence for some specimens of ancient Jewish art, only three could be produced,—the piece of money called a shekel, bearing a cup on one side, and an almond branch on the other; the candlestick with seven branches; and the table of shew-bread, on a bass-relief under the arch of Titus."

Of the excellence of their statues, we have no means of judging except from

analogy with Egyptian art, copious examples of which, exist in the present day. From the great number and variety of the sculptures of the Egyptians, from the most rude to the most perfect, there is every reason to believe we have specimens of its earliest and latest periods.

In Egypt sculpture assumed a magnificence commensurate with all the other works of that singular people, which were ever upon a grand and imposing scale, well calculated to convey sublime and imposing ideas, and although many of their works were of colossal dimensions, their size did not prevent their artists from giving them as high a degree of finish as those destined for close and minute inspection. Even those which were placed in the highest and most elevated positions had as fine execution and as great a polish as the smallest statues usually receive. One of the finest specimens extant, is the head of the statue of Memnon, now in the British Museum, whither it was taken by Belzoni, in 1818. This learned traveler in speaking of the removal of the Colossus, says: "As I entered these ruins (the Memnonian,) my first thought was to examine the colossal bust I had to take away. I found it near the remains of its body and chair, with its face upwards, and apparently smiling on me, at the thought of being taken to England." "I must confess," continues this traveler, "that my expectations were exceeded by its beauty, but not by its size. I observed, that it must be the same statue as is mentioned by Norden, lying in his time with its face upwards, which must have been the cause of its preservation. I will not venture to assert who separated the bust from the rest of the body by an explosion, or by whom the bust has been turned face upwards. The place where it lay was nearly on a line with the side of the main gateway into the temple; and as there is an other colossal head near it, there may have been one at each side of the doorway, as they are to be seen at Luxor and Carnack."

Of one of these statues it is said that when the sun rose and shone upon it, it uttered a joyful sound, but when it sat, the sound was mournful, and that it shed tears and responded in seven verses. Until the fourth century after Christ this sound continued to be heard. Concerning its nature, and the story of Memnon there have been many hypothesis. Pansanius and Strabo relate some curious accounts of this statue and the sounds which it uttered. It is supposed to represent a hero in the act of worshipping the sun.

The wonderful works of the Egyptians are not so much to be admired for the artistic knowledge they display, as for the patient labor and mechanical skill evinced in their execution. The material on which they operated consisted of but four kinds, sandstone, limestone, breccia, and granite. How they managed to cut such hard substances as the last named two, is matter of surprise in the present day, for it is generally believed that the sculptor's tools in those days were of copper, as iron was then unknown to them.

In the gallery of the Louvre, in 1830, I saw some Egyptian statues, executed in exceedingly hard stone, one, to the best of my recollection had for its basis,

silex, it was semi-transparent and so very hard that I could not conjecture by what process it was produced.

Belzoni, in his work on Egypt, says: "Carved works were very common, and in great perfection, particularly in the proportion of the figures; and it is to be observed, that the Egyptians were unacquainted with anatomy, yet in these as in their statues of marble, they preserved that great simplicity peculiar to themselves, that is always pleasing to the beholder."

All their larger figures were generally executed in calcareous stone, basalt and alabaster. As yet the antiquarians have had no evidence that bronze was used by the Egyptians; nor have we any accounts of its being used until the arts had attained considerable eminence in Greece.

In the cultivation of the various arts which distinguished the Egyptians, it is not improbable they were preceded by the Phœnecians, Tuskans, and Persians.

Flaxman says, "most of their great works are mentioned by the ancient writers as being done in the reign of Sesostris, and afterwards, Sesostris lived in the reign of Rehoboam, king of Israel, about the time of the Trojan war, or 1000 years before the christian era, which shews that the arts of Egypt and Greece were in a progressive state of improvement at the same time, and from the Greeks residing with them to study theology, philosophy and science,—from the great intercourse, political and commercial, between the two countries from the heroic times, —from the Greeks being long settled in the city of Naucratis and other parts of Egypt, we may fairly conclude their communication in arts was just as free as in other concerns, which seems the more likely, as there is considerable resemblance in the features and contour of the early Greek and Egyptian statues."

The same author again remarks, "The enormous works of Egypt have struck every foreign visiter with wonder and awe, from Herodotus down to the members of the French Institute." Herodotus says "one of their buildings is equal to many of the most considerable Greek buildings taken together," and M. Ripand observes, "those works are so prodigious, they make every thing we do look little;" and indeed if we consider the execution of a statue sixty-five feet high in so hard a material as granite, the boldest heart would be appalled at the incalculable labor and difficulties of the work.

"In their basso-relievos and paintings which require variety of action and situation, are demonstrated their want of anatomical, mechanical and geometrical science relating to the arts of painting and sculpture.

"The king or hero is three times larger than the other figures; whatever is the action, whether a siege, a battle, or taking a town by storm, there is not the smallest idea of perspective in the place, or magnitude of figures or buildings. Figures intended to be in violent action are equally destitute of joints, and other anatomical form, as they are of the balance and spring of motion, the force of a blow, or the just variety of line in a turning figure. In a word, their historical art was

informing the beholder in the best manner they could, according to the rude characters they were able to make.

"From such a description it is easy to understand how much their attempts at historical representations were inferior to their single figures.

"What has been hitherto said of Egyptian Sculpture, describes the ancient native Sculpture of that people. After the Ptolomies, successors of Alexander the Great, were Kings of Egypt, their Sculpture was enlivened by Grecian animation, and refined by the standard of Grecian beauty in proportions, attitude, character, and dress.

"Osius, Isis and Orus, their three great divinities, put on the Macedonian costume, and new divinities appeared among them in Grecian forms, whose characteristics were compounded from materials of Egyptian, Eastern and Grecian theology and philosophy."

COMMERCIAL STATISTICS.

Owing to a press of matter selected for the October number, we failed in giving that completeness to the commercial statistics of New Orleans, for the year ending on the 31st of August, 1848, which we desired. We have, therefore, continued them in the present number.

COMMERCIAL STATISTICS OF NEW ORLEANS.

Comparative Prices of Middling to Fair Cotton at New Orleans, on the first of each month during a period of five years—together with the total receipts at New Orleans, and the total crops of the United States.

	1847–48.	1846–47.	1845–46.	1844–45.	1843–44.
	Cents.	Cents.	Cents.	Cents.	Cents.
September,	10⅝@12	7½@ 9	7¼@8⅜	6 @7½	5¾@ 8
October,	10 @11	8¾@10	6⅞@8⅜	5¾@7⅛	7 @ 8¾
November,	7½@ 8⅛	9 @10½	7 @8	5⅛@6⅞	6¾@ 8
December,	6½@ 7¼	9 @10¼	6½@7⅝	4⅜@6¼	7⅛@ 8⅜
January,	6½@ 7¾	10 @11¼	6½@7⅝	4⅜@6½	8¾@10¼
February,	6⅝@ 8	11½@13	7⅜@7¾	4¾@6½	8¾@10
March,	6½@ 7⅞	9½@11	6½@8¼	5 @6½	8¼@ 9¾
April,	6¼@ 7⅜	10⅜@11⅜	6⅜@8⅜	5¼@7½	7½@ 9¼
May,	5 @ 6½	10⅜@12¼	6½@8½	5¾@7¼	6¾@ 8¾
June,	5½@ 7¼	9⅞@11¾	6½@8	5⅞@7¼	7 @ 8¾
July,	5⅜@ 7¼	9¼@10⅜	6½@8	6⅛@7½	6½@ 8¼
August,	5⅜@ 7½	10½@12	7 @8½	6¼@7¾	6½ *a* 8
	Bales.	*Bales.*	*Bales.*	*Bales.*	*Bales.*
Rec'ts N. O.	1,188,733	707,324	1,053,633	979,238	910,854
Crop of U. S.	2,350,000	1,800,000	2,100,537	2,400,000	2,030,409

Comparative Statement of the Receipts, Exports and Stocks of Cotton, at the following places at the dates annexed.

PORTS.	Stocks on hand Sept 1		Received since 1st Sept.		Exp'rted from Sept. 1, '47 to dates.				Exported from sept. 1, '46, to dates in '47.				Stocks on hand and on ship board.	
	1847.	1846	1847.	1846.	To Great Brit'n.	To Frnce	To oth F. ports.	Total forei'n ports.	U. S. n'thn ports.	To Great Brit'n	To Frnce	To oth F. ports.	Total Foreign Ports.	U. States Northern Ports.	1848.	1847.
New Orleans.....Aug. 31	23493	6332	1188733	707324	654083	140968	154807	949858	252039	385368	95719	83920	565007	159561	37401	23493
Mobile.....Aug. 22	24172	7476	436930	322750	224673	61212	29070	314955	107938	127518	38638	19784	185940	97853	28062	27607
Savannah.....Aug. 24	7787	5922	241165	233790	119897	5177	1411	126485	93946	107227	11150	944	119321	96089	9450	5661
Charleston.....Aug 25	29655	8709	260223	348976	15309	29579	16177	198846	97835	121662	51452	17222	190336	156040	11603	28478
Florida.....Aug. 12	2108	1088	150817	127918	40338	....	7674	48012	98360	30896	2592	3238	36726	73029	2345	2285
Va. and N. Carolina..Aug. 12	448	200	7598	17203	68	....	364	432	1958	152	....	....	152	6417	700	650
Texas.....Aug. 29	32	1500	39742	9500	....	...	772	772	28289	....	....	543	543	8080	747	32
New York.....Aug. 14	83259	48539	....	....	108049	37992	41730	187771	....	49440	36111	34898	120449	....	56969	106013
Other ports.....Aug. 12	26682	20950	....	....	7420	1412	2646	11478	....	947	425	686	2058	....	....	....
TOTAL BALES.....	197636	98716	2325108	1767461	1307618	276349	254651	1838609	680365	823210	236087	161235	1220532	597009	147267	196219
Total to dates, 1846-'7.	98716	....	1767461	....	823210	236187	161235	1220532	597009	....	....	....	....	....	196219	....
Increase this year.....	98920	....	557647	....	484408	40253	93416	618077	83356	....	....	....	....	....	....	....
Decrease.....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	48952	....

☞ We have taken from New Orleans the amounts received from Mobile, Florida and Texas. Also, from Charleston the receipts from Sa annah—and Mobile the receipts from Florida.

The exports from Georgetown to New York are added to the Charleston receipts, and the exports from Darien to Liverpool and New York are added to the Savannah receipts.

The exports from Mobile and Florida to New Orleans, and those from Savannah to Charleston, have been deducted from exports to northern Ports.

Comparative Prices of Molasses on the Levee, on the 1st of each month for 5 years.

	1847-8. Cents.	1846-7. Cents.	1845-6. Cents.	1844 5. Cents.	1843-4. Cents.
September	28 @32	15 @21	24 @27	26 @28	18 @21
October	28 @32	20 @25	21 @24	24 @26	23 @24
November	22½@23	26 @26½	21 @22	20 @21	14 @20½
December	19½@19½	23 @23½	20 @..	20½@20½	20 @21
January	17 @17½	24½@25	21 @21½	16½@17½	22½@23
February	17 @19	27 @..	21 @21½	14½@16	22 @23
March	15 @21	29 @29½	22½@23	20½@21	23 @24
April	15 @21	25 @29	25 @25½	25 @26	23 @25
May	12 @16	26 @30	23 @23½	24 @27	25 @26½
June	15 @20	26 @30	18 @22	18 @27	24 @25
July	15 @20	26 @30	15 @20	20 @27	24 @26
August	15 @20	28 @31	15 @21	26 @28	25½@26½

Comparative Prices of Flour on the first of each month, for five years.

	1847-8. Dollars.	1846-7. Dollars.	1845-6. Dollars.	1844-5. Dollars.	1843-4. Dollars.
September	4½@6	3½@4	3½@4½	— @6	4½@4½
October	4 @5	4 @4½	3½@4½	3½@4½	4 @4½
November	5½@5½	5 @5½	4½@5½	4 @4½	4 @4½
December	5½@6	4½@5½	7½@8½	4 @4½	4½@4½
January	5½@6	4½@5½	5½@7	4½@5½	4½@4½
February	4½@5½	6 @6½	5 @6½	3½@4½	4½@—
March	5 @5½	5½@—	4½@5½	4 @4½	4½@4½
April	5½@5½	6 @6½	4½@5	3½@4½	4½@4½
May	4½@5½	5½@6½	4 @4½	3½@4½	4½@4½
June	4½@4½	6½@7½	3½@4½	3½@4½	3½@3½
July	4½@5	6 @7	4 @4	3½@4½	3½@4½
August	4 @4½	4 @5½	3½@4	4 @4½	4 @5½

Comparative Prices of Corn, in sacks, on the first of each month, for five years.

	1847-8. Cents.	1846-7. Cents.	1845-6. Cents.	1844-5. Cents.	1843-4. Cents.
September,	50a55	36a40	40a42	43a44	42a43
October,	50a75	60a65	35a38	40a—	37a40
November,	41a50	58a75	45a50	43a45	34a35
December,	45a50	60a70	80a82	34a37	43a45
January,	54a60	55a67	55a63	37a38	36a38
February,	40a55	80a90	40a50	38a40	32a33
March,	36a42	75a90	47a52	40a41	35a35
April,	30a38	80a95	42a50	35a36	40a42
May,	22a28	55a70	40a50	35a38	40a41
June,	32a36	65a80	35a40	28a32	33a35
July,	33a39	65a75	25a32	30a34	40a43
August,	36a42	40a50	30a35	34a36	40a45

Comparative Rates of Freight on Cotton and Tobacco to Liverpool, Havre and New York, on the first of each month, for the past two years.

COTTON—PER POUND.

	1847-48.			1846-47.		
	Liverpool.	Havre.	N. York.	Liverpool.	Havre.	N. York.
September,	1-2d	—ct	1-2ct	1-2d	1 1-16	1-2ct
October,	5-6	1 1-4	1-2	1-2	1 1-16	1-2
November,	5-6	1 1-4	5-8	3-8	7-8	3-8
December,	1-2	1	1-2	1-2	1	1-2
January,	7-16	1	3-8	5-6	1 1-8	1-2
February,	1-2	1	1-2	9-16	1 1-4	3-4
March,	15-32	15-16	1-2	1	2	1 1-8
April,	9-16	1	1-2	5-8	1 3-4	3-4
May,	9-16	0	5-8	5-8	1 1-4	3-4
June,	7-16	0	3-8	9-16	1	3-4
July,	3-8	0	3-8	5-8	1 1-4	3-4
August,	5-16	0	1-4	5-8	1 1-4	5-6

TOBACCO—PER HOGSHEAD.

	1847–48.			1846–47.		
	Liverpool.	Havre.	N. York.	Liverpool.	Havre.	N. York.
September,	40s 0d	$0 00	$5 50	40s 0d	$0 00	$3 87½
October,	40s 0d	0 00	4 75	40s 0d	0 00	3 87½
November,	40s 0d	0 00	6 00	37s 6d	0 00	3 87½
December,	40s 0d	9 50	4 75	00s 0d	0 00	3 25
January,	40s 0d	9 50	4 00	57s 0d	0 00	7 50
February,	39s 0d	9 50	4 75	57s 0d	0 00	6 75
March,	40s 0d	0 00	5 25	00s 0d	0 00	11 00
April,	40s 0d	0 00	5 25	00s 0d	0 00	8 00
May,	45s 0d	0 00	7 50	00s 0d	0 00	11 00
June,	36s 0d	0 00	4 75	00s 0d	0 00	7 75
July,	35s 0d	9 00	4 00	00s 0d	13 00	8 50
August,	30s 0d	7 00	2 00	50s 0d	13 00	8 00

Exports of Specie for three years, from 1st September to 31st August.

1847–8,	-	$1,845,808	1845–6	-	$1,872,071
1846–7,	-	6,680,050	1844–5	-	2,249,138

Monthly Arrivals of Ships, Barks, Brigs, Schooners and Steamboats, for two years, from 1st September to 31st August.

	1847–48.							1846–47.						
MONTHS.	Ships.	Barks.	Brigs.	Schrs.	St. Ships.	Total,	St. Boats.	Ships.	Barks.	Brigs.	Schrs.	St. Ships.	Total,	St. Boats.
September,	17	13	15	41	6	92	184	37	12	19	42	7	117	141
October,	43	27	18	44	12	144	288	78	30	31	80	7	226	177
November,	146	45	31	62	15	199	266	67	35	63	63	9	237	281
December,	99	61	66	72	14	312	311	72	45	62	43	8	230	337
January,	102	82	74	97	18	373	349	78	64	91	99	6	338	346
February,	97	60	59	74	10	306	316	42	34	63	85	5	229	298
March,	97	50	47	82	17	293	327	83	53	72	105	1	314	317
April,	72	42	40	68	11	233	250	86	41	45	86	6	264	293
May,	90	42	35	96	22	285	229	77	51	87	166	11	392	284
June,	88	39	33	49	20	229	171	51	38	54	101	19	263	251
July,	68	34	24	59	26	211	152	53	30	52	67	16	218	174
August,	36	14	20	51	29	150	134	45	18	24	52	14	153	125

DISCOVERIES AND IMPROVEMENTS.

INDURATING BUILDING MATERIALS.

AMONG the extraordinary discoveries of the present day, by which materials of the most humble pretensions in works of art are rendered of the utmost utility—the most refractory substances made to bend to the power of scientific research, and many productions, which have for ages been thrown away as useless, brought into most extensive usefulness—we know of none by which a more extraordinary,

not to say magical metamorphosis is effected, than the operation patented by Mr. William Hutchinson, by which plaster of Paris, Bath, Caen, and other soft stone, chalk, wood, paste-board, and, in fact, any other material, is rendered hard as metal, receiving the most brilliant polish, and made absolutely imperishable from atmospheric action, vermin, &c. The purposes to which this patent can be applied are innumerable. The first idea of the patentee was the induration of the softer and more common, and almost useless stones for the purpose of paving; but so ample was his success, that he soon took a loftier view, and has rendered the operation not only applicable to all common purposes for which stones and slates are used in building—such as paving, both internal and external, window sills, fittings of daries, &c.—but now applies the operation to all the higher works of art. Plaster of Paris casts, of the most elaborate designs, in busts, relievos, architectural ornaments, fonts, and ornamental flooring for churches, trellis work for balconies, ornamental ink stands, &c., are rendered imperishable by the operation of the elements, and hard and tough as metal. Sculptors who may so choose may work in Bath or Caen stone, or even chalk, and the production will be rendered superior to marble, and in all these operations the finest edges of the cuttings are preserved, and not a chisel mark is lost.

In inspecting specimens of Mr. H.'s work, we were shown a slab, of soft sand stone, from Tonbridge Wells—so soft, that it might be rubbed into powder by the hand—rendered hard as granite, and rung like a bell; numerous plaster of Paris ornaments and busts, metamorphosed into bronze, granite, and parti-colored marbles—drain, water and gas pipes, made from Bath stone, chalk, or paper, hard as granite, and polished internally like marble; in fact, the results of the operations are most extraordinary. The water pipes, and prepared sheets for roofing, will be found most economical, both in first cost and in wear and tear; in fact, they can be rendered at a cost which comes far below any other description of material which has yet been introduced for these purposes; the sheets would also be highly applicable for railways, and many other public engineering uses.—[*London Mining Journal.*

ARTIFICIAL MINERALS AND PRECIOUS STONES.

A PROCESS has been explained to the Paris Academy of Sciences, and a patent obtained for it, whereby *artificial stone* of every quality may be produced, from artificial granite to statuary marble.

This invention is, it is said, from its cheapness, a great advantage for all the purposes of architectural decoration, and from its plastic nature before it becomes hard, of great service to sculptors in taking casts of statues, busts, &c., and even of figures of the size of life. The cost in all cases, where carving is required in stone, in which this composition is substituted, is less by nine-tenths. The invention is founded on the chemical analysis of the natural varieties of stone, and the

manufacture is capable of such modifications as are requisite to produce all the varieties—"stones manufactured to order."

The artificial stone produced is less absorbent than natural stone, and is superior in compactness of texture, and will resist frost, damp, and the chemical acids. It is made of flints, and silecious grit, sand, &c., rendered fluid by heat, and poured into moulds as required till cool and hardened. Its strength and solidity enable it to resist more blows than real stone.

Specimens of the invention have been forwarded to London, and their appearance is pronounced exceedingly curious. They consist of many varieties, some being plain pieces of coping stones for variegated pavements for halls and rooms, stone ornaments, such as mouldings for friezes, finials, and some more elaborate, having flowers and devices apparently cut with a chisel.

PATENT AIR SEAT SADDLE.

At the recent exhibition of the Agricultural Society of York, (England,) Mr. Taylor, of Banbury, Oxfordshire, exhibited beautiful specimens of improved harness, among which was a patent inflated air-saddle, for riding, with a moveable panel, invented, improved, and manufactured by the exhibitor. The patent air-saddle is an excellent article for ladies and gentlemen's riding; and to the invalid it will be invaluable, as the elasticity prevents the shaking which is frequently occasioned by the rough action of the horse, and is by experienced riders allowed to be the easiest ever invented, both to horse and rider; and which does not, as is suggested by many persons act as a spring saddle, or tend to shift the rider from his seat. A hard or soft seat may be used as required—*Farmer and Mechanic.*

PATENT SAW MILL.

Letters patent have been granted for a saw mill possessing great perfection of parts and combinations and great versatility of action. It is adapted to ordinary rectilinear sawing, to the sawing of curves, regular or irregular, and to the sawing of warped surfaces, such as are used in ship building, and elsewhere. It will be readily perceived that machinery which is principally self-acting and capable of such a variety of duties, cannot be intelligibly described in this paper.—*Patent Office Report.*

ACCESSIONS TO OUR EXCHANGE LIST.

Daily and Weekly Fountain and Commercial Standard.—This is the title of a paper recently established in this city. In referring to the prospectus we observe that it is "devoted to temperance, morals, literature, commerce, agriculture, manufactures, general news, mechanic arts, &c., neutral in politics and religion." The

editors say "we shall sustain a high standard of morals, carefully excluding from our columns every thing calculated to pander to a vitiated taste, or an immoral tendency—to this rule we shall scrupulously adhere."

These are objects that challenge the patronage of every individual in the community, and it is highly gratifying that gentlemen should be found among us possessing a sufficient degree of moral courage to "give up a prosperous business" and devote their time and talents to such lofty purposes. Such a paper as the editors propose to publish is greatly needed in the west. We want a "family paper," one that may be read with safety and without a blush by every member of the household—one that will not misstate or give false coloring to facts for party purposes—one that does not publish scandal that may not be repeated without violating the principles of propriety. In fine we want a paper whose object shall be to elevate the moral tone of society, and refine the taste of the age. Thus far the editors have given earnest that they will do justice to the great work which they have taken in hand, and we sincerely wish that their success may be commensurate with the importance of the principles which they advocate and the objects they purpose to achieve.

The Liberia Advocate.—This is the title of a monthly sheet published in this city by the Rev. ROBERT S. FINLEY. Terms, fifty cents per year, if paid in advance—otherwise one dollar. This paper is devoted to the cause of colonizing in Africa the free blacks of the United States. A cause highly worthy of the patronage of every American citizen, and one which we are happy to perceive is daily gaining strength. No scheme affecting the condition of an entire race of human beings has ever been devised by man that involves so many interesting subjects for the contemplation of the philosophic mind, as that which proposes to return to the land of their ancestors, the descendants of the African race who have been born in this country. And we are fully persuaded that but for the unfortunate fanaticism of the Abolitionists, the Colonization Society would have carried this great work to a point that would ere this have challenged the admiration of the world. We are aware that the opinion is generally entertained that the Society can never control means sufficient to relieve the country from any considerable number of these people. But when we consider the immense resources of this country, and that ours is a government of the people who have the power of giving direction to its policy, we may fairly conclude that if the friends of colonization will persevere in the cause, that either private or public means will be found in time sufficient for the end proposed. We recommend those who feel an interest in the cause of colonization to subscribe for the Advocate, it contains much interesting matter upon this and other subjects, and withal costs so little that every one can afford to take it without inconvenience. We sympathize most sincerely with the editor in his philanthropic undertaking, and bid him a hearty 'God speed' in his labors.